PHOTO-ERA

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RUDOLF EICKEMEYER, JR.

"Three ducks on a pond,
A grass-bank beyond,
A blue sky of spring,
White clouds on the wing.
What a little thing
To remember for years,
To remember with tears!"

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Photography Afield

DAVID J. COOK

"Nature knows her own — and to her sons will more
And more to purpose freely pour
In one wood-walk than learned men
Can find with glass in ten times ten."

THE sun's warm waves have driven away the frosts of winter, and the tears of heaven have moistened the soil. Gentle winds soothe the whole face of the earth, and therein stirreth a desire that awakes and sings. The trees, the shrubs, vegetation and the flowers — all spring into life and are clothed in their loveliest costumes. Nature is striving her best to please all mankind, and all things lovely and lovable delight one another. Now is the time when the heart of the true lover of the beautiful, whether poet, painter or artist-photographer, is filled with the intense joys of living. Old things have passed away, or have become as new, and it is only to be expected that the disciple of Daguerre will be impatient to away to the fields in search of the pictorial.

To see nature as she is, however, one must be in perfect accord and in tune with her. Make her one's ideal. Be nature-lovers, for the nature-lover is one who admires, deeply, the ever-changing panorama, and longs to depict its varying moods. To him photography offers a medium of expression far more to be desired than mere word-pictures.

Art is the expression of genius, and the artist-photographer thus endeavors to express his conception of what constitutes the pictorial; and whether the thought or conception expressed be in words, phrases, pigments and brush, or camera and sensitive media is immaterial. That photography is a fine art is herein answered; but the worker must be possessed of the true artistic feeling, which makes for good poetry, for art is poetry; and the question whether the worker is possessed of the spirit essential to good poetry, painting and photography is of first consideration. Is he a fine artist? Does his work possess that real sentiment and finish which lives and excites human sympathy? Has he

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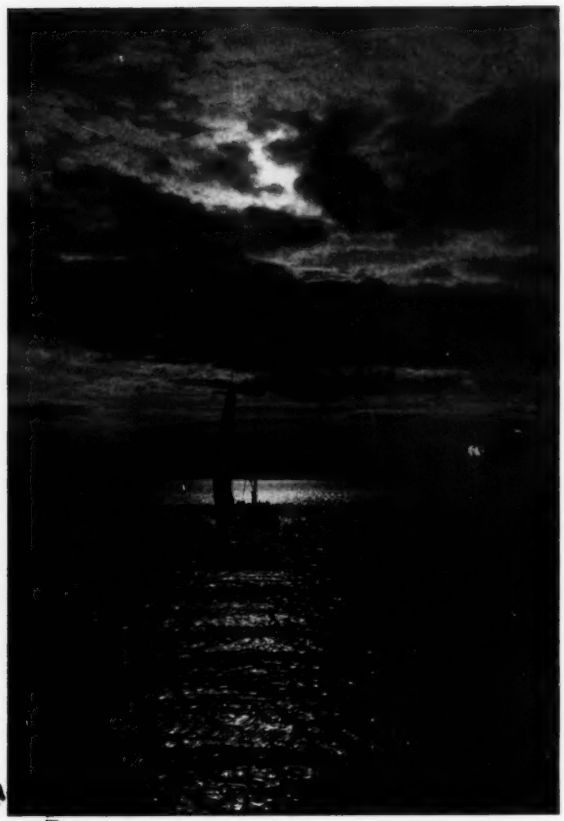


MOONLIGHT AT SEA — WM. NORRIE

skill? The artist-photographer, like the poet and painter, should so select and arrange his composition that it is intelligible and worth the telling, and so tell it that others may readily grasp its beauty.

We derive from nature many lofty ideals, and she must not, therefore, be recorded as so much fact, even when great skill is exercised in the execution; for although nature is not art, nor art nature, they are not at variance one with the other. Art is the perfecting of nature — selected nature; and has its beginning and ending when the worker, so shaping his raw material, meets his ideal standard of beauty.

He who studies nature most will make the best pictures. The man who knows most sees most, enjoys most, and he realizes that magnificent nature cannot be presented through imprinting commonplace detail on sensitive media.

OUTWARD BOUND — WM. NORRIE

Photography is not, in itself, picture-making; for nothing will make a picture of a scene which does not possess the elements of the pictorial. It is not enough that the scene be beautiful; but whether or not it will make a picture. Will it photograph? Would not another view-point, a different season of the year or time of day, or the presence of animated life add to its pictorial capabilities? Pictures are first made — taken afterwards; and the best one can do in all the actual processes of exposing, developing, printing, and in the manipulation of one's chemicals, is but a poor substitute for, or imitation of, the pictorial. Picture-making must not be confounded with picture-taking. It lies, not, as many photographers suppose, in performing certain mechanical actions. Dodging, retouching, masking, doctoring, etc., may be conducive to photographic perfection; but it is the trained eye, the intellectual, versatile, progressive student, superbly equipped by technical training, who first recognizes the picturesque, and produces works of art that are really great.

How many people see in nature anything but the commercial value of things? Possibly they are afforded momentary pleasure, in a material sense, but do not stop to consider its æsthetic value. Some, however, stop and ponder. They look and listen to the story told, and are impressed with the majesty and mystery. These are the people who are nature's own — the poets, painters and artist-photographers.

Almost any vista will charm the educated eye — the woodland path; the peaceful vale; the bit of marsh; the river-bank; a bit of sky; the spectral pine, tipped with the morning dew, or the forest patriarchs outlined against the sunset-glow; — each has its own story to tell, and proclaims that the hand which made them is divine. Is it any wonder that the moment we begin to select any portion of this wealth of beauty and grandeur, with a view to make it our own, and confine it within the boundaries of a photograph, we approach the problem with fear and trembling? For it is only when we have learned, through repeated failures, not to attempt an elaborate composition that we are assured any measure of success. Scenes of grandeur or unusual subjects present great difficulties to the pictorial worker. Better far that the photographer be content to portray simple, homely scenes, in a simple manner, eliminating all unnecessary material not absolutely essential to the story. He should remember that the greatest truths are told in the fewest words, and that neither grandeur nor beauty, alone, can give charm.

One of the greatest faults which characterizes the work of many a photographer is an overburdening of the picture-space with detail. He is too literal in his treatment of the subject. The painter, on the one hand, often taxes, to the utmost, the patience of the layman to discern his theme or conception; while the photographer, on the other hand, neglects or ignores the element of mystery altogether.

To produce a picture that will outlive passing interest, and that will draw one again, and yet again, to admire some new beauty, and hold his attention indefinitely, the story must be unfolded gradually. It will not do to tell all. Something must be left to the imagination. The critic prefers to judge some things for himself. One should lead the observer, step by step, into the picture — keeping the point of interest, or that part which is of principal importance, well within the foreground; emphasizing this principal theme by lights and lines; subordinating the non-essentials; using the middle-distance to unite foreground to background, which should exist merely as a *background*, uniting the whole, and harmonizing both in tone and line, so that the story is clear and intelligible.

With a proper appreciation of art, as herein exemplified, and a knowledge of technique — for the photographer can no more afford to excuse or ignore his technique than the poet his meter or the painter his coloring or drawing, on the plea that it is artistic, because treated in some uncommon way or done by some unusual process — success is assured.

The present-day photographer must come to realize — what is so patent to the old, experienced practitioner — that to produce an artistic photograph requires practice of the science, as well as the art, of photography — a blending of the scientific with the artistic.

Technical perfection and artistic photography are synonymous: the one represents a conception; the other, its expression or execution.

(An article on "Landscape Photography" will follow next month.)

Copying Pictures by Photography

WILLIAM S. DAVIS

AS most photographic workers frequently have occasion to make copies of pictures, a few hints in reference to this line of work may be desirable, as it is not an easy matter for those who are inexperienced to secure good results, the difficulties presented being quite different from those in other kinds of photographic work. Inasmuch as each class of pictures requires individual treatment, I will take them up one class at a time. First, however, let us consider the equipment best adapted to this work.

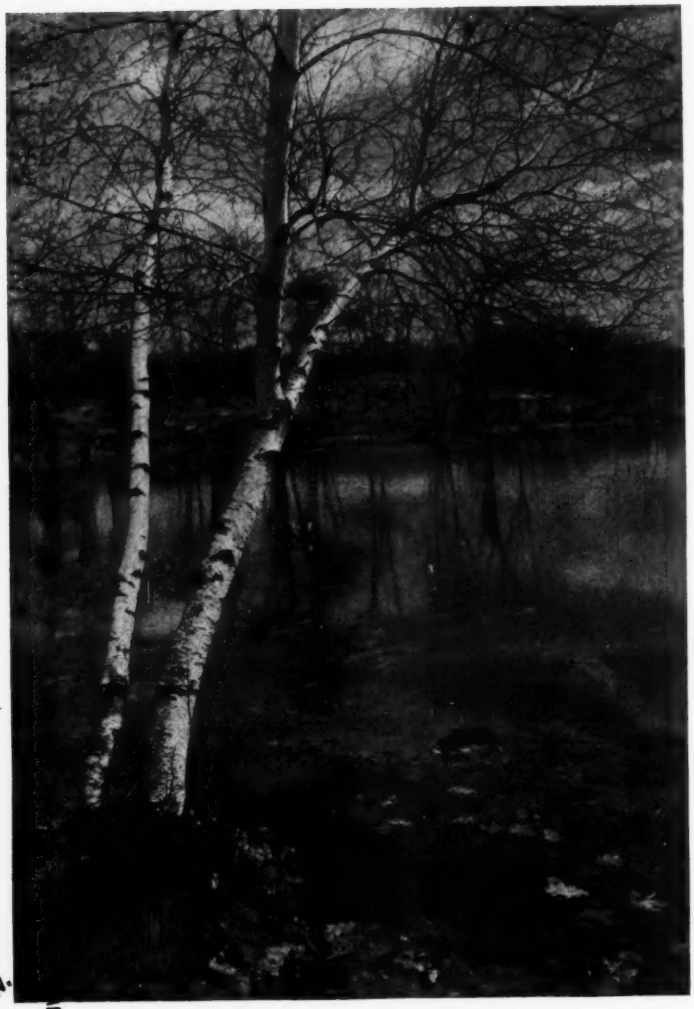
The camera must have sufficient bellows-extension to permit focusing sharply upon an object at very close range, the distance depending of course upon the size of the original and that of the copy desired; but when a copy the same size as the original is wanted the bellows must be long enough to allow the lens to be separated twice the distance from the focusing-screen that is necessary for ordinary outdoor work; or, in other words, a lens of six-inch focus must be removed twelve inches from the sensitive plate to yield an image the same size as the object. It may safely be taken for granted, however, that almost any of the ordinary folding-cameras with double or triple extension-beds will answer the purpose, although none of the light, folding-styles quite equals for convenience of manipulation the older forms of back-focus view-cameras. A short-bellows camera may be utilized for copying, by placing one of the supplementary lenses, made for such work, over the regular lens. A wide-angle lens can also be used, although in either case it would be necessary to stop down more than with the regular lens.

If one desires to copy subjects in color, a ray-filter or color-screen must be included in the outfit, as most paintings cannot be satisfactorily reproduced without one. It need not be very deep in color, however. A medium yellow filter which increases the exposure only three or four times will give good color-values on color-sensitive plates. In this connection, isochromatic or orthochromatic plates (preferably backed or double-coated) should be used. They are equally good for general copying; although for pictures in monochrome ordinary plates of slow or medium speed will yield satisfactory results.

Now for the subjects, which I will divide into two general classes — first, pictures in monochrome and, second, those in color.

Subjects in Monochrome

Under this heading may be included photographic prints, half-tone reproductions, drawings in "wash," distemper, crayon and pen and ink; also engravings and etchings. For copying-purposes these must be separated into two subclasses, depending upon whether the light and shade or "half-tones" of the picture are produced by various shades of gray, as in photographs or wash-drawings, or by lines of pure black, as in pen-and-ink drawings.



A MARCH DAY
E. M. ASTLE

To copy a photograph, or any picture of the first-named class, it should be fastened to a board and set up at one end of a table or bench and the camera placed at the other; but the axis of the lens must be at right angles to the surface of the picture and a good light should fall upon the picture. As swinging or tilting the camera would distort the image, either the camera or copy-holder must be moved about until the lens is opposite the center of the picture. Where much work is done, it will save time in focusing and arranging the size of the image to use a long board provided with blocks or cleats at one end, to keep the camera parallel with the sides, and with suitable guides its entire length for a copy-holder to slide between. A simple style of copy-holder may be made by nailing two boards together in the form of the letter "L," one forming the base and the other the vertical support for the picture, which is held in place by artists' thumb-tacks, heavy rubber bands or any other suitable means.

If the picture is on rough paper the grain may be largely prevented from showing in the copy by having the light as nearly back of the camera as possible, so it will fall more flatly upon the work, or by diffusing the light. This may be done by placing a screen of white tissue-paper or muslin between the light and the picture, and, if necessary, using a large white card or screen to reflect the light from the opposite side. A full exposure will also be a help in preventing the grain from showing in the copy. With an unmounted photograph the grain may be removed temporarily for copying-purposes by soaking it in water, squeegeeing face down on a sheet of clear glass, and then copying while still wet.

Focusing may be done most conveniently with the lens at full opening, at least while arranging the size of the image on the ground-glass. Care should be taken, however, if the lens does not have a perfectly flat field, to equalize the degree of definition evenly over the entire field, and then stop down until the image is sharp in every part. With some lenses it is necessary to readjust the focus after stopping down, so it is well always to examine the image on the focusing-screen after changing the size of the stop. One should avoid the use of a smaller stop than is necessary to obtain the definition required, as it prolongs the exposure needlessly. Stop f/16 is usually small enough, unless a wide-angle lens is used. If any difficulty is experienced in focusing sharply, lay a sheet of printed matter, such as a newspaper heading, in contact with the work, and focus upon the letters with the aid of a magnifying-glass.

Almost any plate can be used for the class of subjects under consideration, but it is easier to secure clear, brilliant negatives with plates of slow or medium speed. If a rapid plate is the only one available, give a short exposure and use a strong developer restrained with bromide. When using slow plates the same rule holds good if the picture to be copied is flat and weak; but should it be very strong in tone and contrast, give extra full exposure and use a normal developer without bromide.

The exposure required is best determined by trial, as it may vary from a few seconds with rapid plates to a number of minutes with slow ones, according to the strength of light, size of lens-stop used and subject; but it will be easier to es-

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timate correctly the exposure which should be given by working as much as possible under the same conditions. A small picture will require more exposure than a large one, for the same size copy, on account of the lens being further from the plate, which, for the time being, decreases the f value of the stop in use. As an approximate guide in copying a photograph equal size, a plate of slow to medium speed would require from thirty to sixty seconds' exposure with stop f/16 in the lens.

Any clear-working developer will produce satisfactory negatives if the exposure has been correctly timed; but those who desire a definite formula will find the following a good one:

Edinol	8 to 10 grains
Sodium sulphite (dry)	40 "
Sodium carbonate (dry)	40 "
Water	4 ounces

With rapid plates, or flat subjects, a few drops of a ten per cent solution of potassium bromide may be added. With correct exposure development will be completed in three to five minutes, at a temperature of 60 to 65° Fahr., the time depending upon the amount of contrast and opacity one wishes the negative to possess.

In copying pen-and-ink drawings a different method must be followed than that employed in dealing with photographs. In this case all gradation of light and shade in the picture is produced by the thickness of and degree of separation between the pure black lines, and not by any change in depth of tone; and the object is to produce a negative with clear, transparent lines upon an opaque ground. It is, therefore, necessary to take particular care in focusing to have the lines absolutely sharp, to avoid any veiling by diffusion of definition, and to use a plate and developer which will give the required contrast. There are several kinds of plates on the market intended for such work, known under various names, such as "Contrast," "Process," etc. If much work is to be done these plates are recommended; but where this is not the case, slow, backed or non-halation plates can be used successfully in their place; or if even these are not at hand, a slow plate which will work with great clearness may be evolved by immersing (in a dark-room, of course) any fast plate for two minutes in a one per cent solution of potassium bichromate, rendered acid with a few drops of hydrochloric acid, afterwards washing in several changes of water, when it may be exposed either before or after drying. This plate will require fifteen to twenty times the regular exposure; but as it is almost impossible to fog a bichromated plate through over-exposure, one need not be afraid to expose too long, of course within reasonable limits. Whatever kind of plate is used, enough exposure must be given to obtain sufficient density in development to make an opaque ground in the negative.

For developing copies of line-work I know of nothing better than a developer prepared by the Cramer "Contrast" formula.

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"Contrast" Developer for Line-work

Water	3	ounces
Sodium sulphite (dry)	48	grains
Edinol	10	"
Potassium bromide	2	"
Potassium (or sodium) carbonate (dry)	24	"

If preferred, 12 to 15 grains of hydroquinone may be used in place of edinol.

Development must be thorough to secure the necessary opacity. Should the lines appear veiled and grayish after the negative is fixed, they should be cleared by immersing the plate in a fresh hypo solution, to which has been added a small quantity of saturated solution of potassium ferricyanide; but as this is a strong reducer, its action should be stopped as soon as the lines are cleared.

When it is desired to secure as close an imitation of wood or steel engravings as possible they should be treated as line-work; but in most cases it is better to treat them the same as a photograph or similar print, particularly when making a small copy of a large engraving, as the fine lines sometimes run together in a small reproduction, and if treated as line-work would block up the shadows, producing a harsh result.

With etchings much depends upon how they are printed. If the lines are sharp on a clear ground the same method used in copying pen-drawings might be employed; but where, as is more often the case, a certain amount of ink was left on the surface of the etching-plate to produce a "tint" on the proof, and also soften the lines, one should treat the etching the same as any picture containing half-tones.

In copying a picture of any kind which is creased or wrinkled it should be placed in a printing-frame containing clear glass, and copied while under pressure; and if the print is on thin paper with printing or other matter on the back, which shows through, back it up with black paper or cloth pressed into close contact.

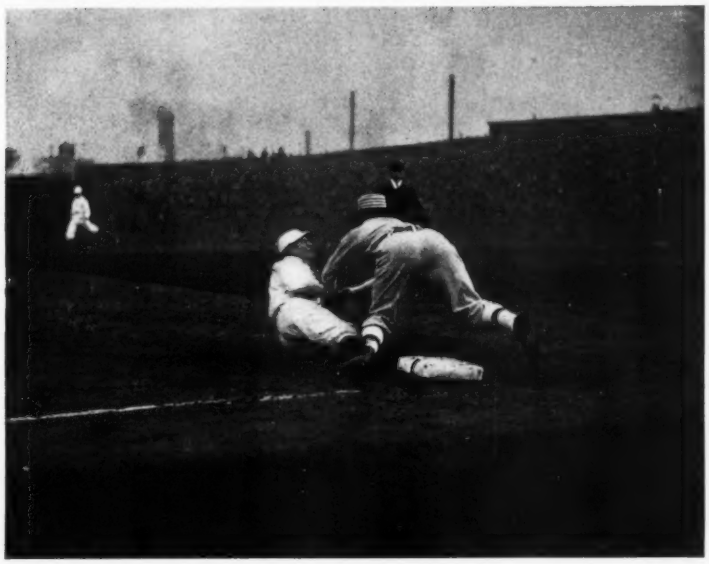
Subjects in Color

Oil-paintings are probably the most difficult pictures to copy successfully, not only because they usually contain a large amount of partly non-actinic color, but on account of the texture of their surfaces and the care necessary to avoid reflections; consequently, considerable skill is necessary to secure the best results. One must try to secure as nearly as possible an exact rendering in monochrome of the relative values of the colors in the painting. To accomplish this, isochromatic plates (preferably backed, or the non-halation kinds) should be used, generally in connection with a color-screen, although when a painting does not have strong color-contrasts it is not always essential to use a screen or ray-filter, as the object of using one is simply to hold back the action of the over-actinic colors when they are present; so before an exposure is made the color-contrasts in the picture should be carefully considered.

The first thing to be attended to, however, is to see that the picture is properly illuminated; and this requires great care. A soft, diffused light is the best. If the painting cannot be moved about, one must, of course, make the best of it, and depend upon movable screens, either opaque or translucent, of sufficient size to shut off stray light, which might cause reflections, or to subdue and equalize intense direct light. When the picture can be moved about, it is best to work by the light from one large window or skylight — a north light of choice, although not of necessity — the painting being placed on an easel or other suitable support, several feet from and back of the window, and in such a position that the light will fall evenly upon the entire canvas. As the light from a window slants downward, the best light is usually near the floor, and a picture will be more evenly illuminated by placing it on a low support and sometimes tilting it backwards a little. With a large canvas, particularly, more care is required; and in such a case it is best to cover the entire window with thin, white muslin, to diffuse the light evenly throughout the room. If the painting is too large to illuminate evenly in this way in the room at one's command, copying in the open air may be resorted to, doing the work on a quiet day by diffused light; but it is usually more difficult to avoid reflections, unless the picture be enclosed by suitable screens.

Should any reflections be seen upon the surface of the painting, when examined from the same standpoint as the camera, move it forward, if possible, until the light comes more from one side; and if this does not remedy the trouble, place a black screen on the side opposite the light and at right angles with the painting, for the cross-lights which cause these reflections are produced by stray light striking the surface of the picture at an improper angle, and partly enclosing the picture with one or more dark screens will exclude them. If the grain of the canvas or pigment does not show too prominently the exposure may now be made; but as the paint, particularly in the high-lights, is heavily "impasted" on many paintings, a strong side-light will sometimes cause the projecting points of pigment to catch and reflect the light, producing minute white spots all over the work, and were a negative made under these conditions the finished print would look as though it were dusted with chalk. In such a case, one or more thicknesses of white cheese-cloth or thin muslin should be placed over the window to diffuse the light. If the effect is still unsatisfactory, the painting may be turned *away* from the window and illuminated altogether by reflected light; but this is seldom necessary.

The exposure required is usually much longer than for black-and-white work, even without a color-screen, and also varies more on account of the difference in actinic power of the colors in different paintings. As an example of this variation, I quote from my note-book the exposures given for two paintings which were copied the same day under similar conditions. Both were illuminated by clear light from a window. On one, a Cramer Instantaneous Isochromatic plate was exposed one minute, with stop f/11, and an Ideal ray-filter on the lens; while the other required three minutes' exposure with the same kind of plate, ray-filter and size of stop, the difference being due to the fact that the first sub-



A CLOSE DECISION R. W. SEARS

ject was composed largely of grays and blacks, with only a little red and yellow, while the second picture contained dark reds and browns in opposition to blues, greens, grays and white, making it necessary to give a longer exposure to secure detail in, and proper values of, the less actinic dark colors. It is safe to say that a painting which contains much yellow, red, or dark brown will require several times the exposure necessary for a picture composed principally of cool colors. The exposures mentioned are not to be taken as the time which should generally be given, as diffusing the light, and other things, make it necessary to depend upon personal experience; but as there generally seems to be a tendency toward exaggeration of contrast in copies of paintings, exposures should be fully timed for the darkest colors, so that all the details will appear in development before density is attained in any part. Development should not be continued too long, however, as a fairly thin negative with soft gradation of tone will make the best print. The first developer mentioned in this article is an excellent one for this work, when used without bromide; but it may advantageously be diluted with from one-half to an equal amount of water, if the subject contains strong contrasts.

Water-colors, pastels and colored prints are less troublesome to copy than oil-paintings, on account of their smoother surface, and freedom from gloss (unless under glass); otherwise they require the same general treatment, except that less exposure is usually needed.

Practical Telephotography

STEPHEN E. WOODBURY

SOMETIMES it is desired to obtain a larger image of an object than the ordinary lens and camera will produce. The most common reasons for this are when a position near the object is inaccessible or when the drawing of the image will be improved by working at a distance. Since the size of the image is directly dependent upon the focal length of the lens employed, a magnified image may be obtained by using a lens of sufficient focal length. In theory this would be very satisfactory, but practically it requires an expensive lens and large camera. Another way is to obtain a negative of the small image as usual and then enlarge from this negative. This method is fairly convenient, but has the disadvantage that the final image has suffered from two attempts at focusing and the enlarged image is made from a small negative having considerable grain, which effectually prevents a sharp enlargement above a moderate power.

A more satisfactory way is to magnify the original image before it is received upon the photographic plate. This original image, being in air, has no grain, and therefore the sharpness of the final image is not impaired thereby. Such magnification may be accomplished by the use of another lens similar to the one used for the original image; i. e., two positive lenses may be used. This requires an extraordinarily long camera and is employed only for special purposes. When a concave or negative lens is fitted between the plate and the positive lens with which the camera is already equipped a magnified image of reasonable power may be produced with a relatively short bellows-extension. If these positive and negative lenses are so arranged that the distance between them can be varied the combination will be able to produce images varying from two or three to eight or ten times the size of the original. This constitutes the telephoto equipment in common use. It is usually supplied as a telephoto attachment containing the negative lens and having a suitable arrangement for adjusting the separation of the lenses for various powers of magnification.

Fig. 1 illustrates such an attachment, drawn partly in section so as to show the construction. To fit this attachment to the camera, the shutter, with the positive lens in place, is unscrewed from the lens-board and the telephoto attachment is inserted in its stead. The shutter with the lens is then screwed into the open end of the telephoto attachment.

It is necessary to call attention to a few properties of the lenses used before entering upon an explanation of the principle of the telephoto system. The positive lenses with which cameras are usually equipped are known as converging lenses, because rays of light coming from a distant point will become convergent by passing through the lens and proceed to a focus, as shown in Fig. 2. The distance from this focus to the optical center is the focal length of the positive

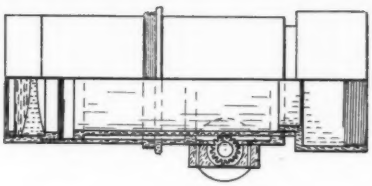


FIG. 1. SECTION OF TELEPHOTO ATTACHMENT

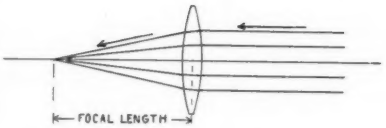


FIG. 2. CONVERGING OR POSITIVE LENS

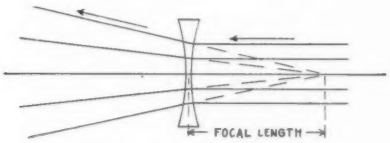


FIG. 3. DIVERGING OR NEGATIVE LENS

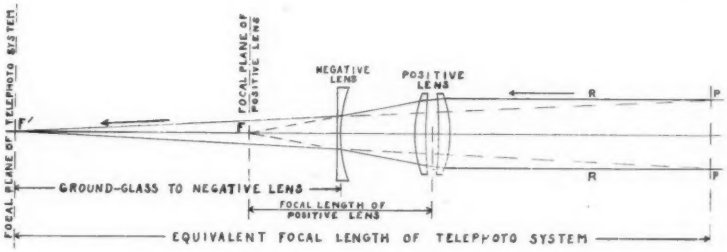


FIG. 4. DIAGRAM OF TELEPHOTO SYSTEM

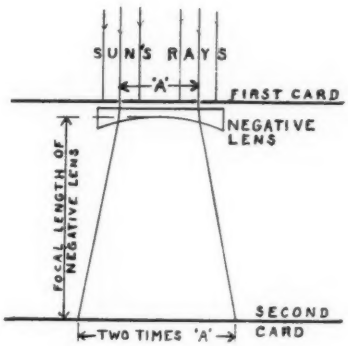


FIG. 5. FOCAL LENGTH OF NEGATIVE LENS

lens. Negative lenses are known as diverging lenses, because rays of light coming from a distant point will become divergent by passing through the lens and will not proceed to any real focus, as shown in Fig. 3. However, if these rays are traced in a reverse direction through the lens and produced in straight lines they will meet in a point, called the virtual focus. The distance from this point to the optical center is the focal length of the negative lens.

Fig. 4 shows diagramatically the arrangement of the lenses and the direction of the light-rays within the telephoto camera. The rays, R R, from a distant point, by passing through the positive lens, become convergent and proceed toward a focus at F; but before coming to a focus are intercepted by the negative lens, which, though it does not render the rays divergent, does, by its divergent effect, cause them to proceed to a focus at a greater distance, as at F′. Upon retracing these rays from F′ to the negative lens and continuing them in straight lines until they intersect the original rays at P P the points of intersection will be in the plane of the optical center of the system, and the distance from the focus F′ to this plane will be the equivalent focal length of the system. Obviously, this focal length is greater than that of the positive lens and will produce images correspondingly magnified. It is interesting to note that this optical center is some distance in front of the camera and that a much shorter bellows is used for a telephoto system than would be required for an ordinary lens of equivalent focal length.

If the positive and negative lenses are separated until the distance between them is equal to the focal length of the positive lens no magnification of the image is obtained, because the plate must be in contact with the negative lens. If the lenses are brought together until the distance between them is equal to the difference of their focal lengths the light-rays will emerge from the negative lens parallel and will not come to any practical focus. In theory, though, they will come to a focus at infinity, and consequently the image will be infinitely large. It is between these extreme positions that the negative lens is used in telephotography and that the following statements hold true. Increasing the distance between the positive and negative lenses decreases the focal length of the system and requires a shorter extension of the bellows. Conversely, decreasing the distance between these lenses increases the focal length of the system and requires a longer bellows-extension. As the image is magnified, the size of the plate must be increased, unless it is not required to include the whole of the magnified image.

Most telephoto attachments have graduations by which one may set them for any given magnification and then focus the camera as usual. However, if an attachment is to be used with lenses differing from that for which it was fitted, or in case the graduations are not supplied, the magnification can be obtained by the following method. It is first necessary to know the focal length of the negative lens. A card, in which two small holes have been pierced, is placed against the negative lens and the sun's rays allowed to fall on the card. A second card, held as shown in Fig. 5, is then moved to and from the negative lens

until the spots of light on it are just twice as far apart as the holes in the first card. The distance from the second card to the lens is the focal length of the negative lens. With the magnified image in focus on the ground-glass the magnification is found by dividing the distance from the ground-glass to the negative lens by the focal length of the negative lens and adding one to the quotient. For example, if the distance from the ground-glass to the negative lens is twenty-one inches and the focal length of the negative lens is three inches, the magnification is $(21 \div 3) + 1 = 8$.

The proper exposure is found by multiplying the exposure that would have been given for the positive lens, used alone, by the square of the magnification; i.e., if an ordinary photograph required $\frac{1}{50}$ second, then an eight-power telephotograph would require $\frac{1}{50} \times 8 \times 8 = \frac{64}{50}$ seconds, approximately $1\frac{1}{3}$ seconds. The equivalent focal length of the system (useful for measurements of size and distance) is found by multiplying the focal length of the positive lens by the magnification. If a positive lens of six-inch focal length were used in the above example the equivalent focal length of the system would be $6 \times 8 = 48$ inches. It will be noted that this forty-eight inches focal length is used with a bellows-extension of only twenty-one inches.

The equivalent diaphragm-opening is found in a similar manner. It is necessary only to multiply the diaphragm-opening of the lens, as read from the mount, by the magnification. Thus, in the case above, if using the lens at f/8, for eight-power, the equivalent stop is $(8 \times 8) = f/64$. A telephoto system — and it is equally true of all systems of lenses and single lens — should not be stopped to an opening smaller than f/71; since the diffraction of light at the edges of smaller openings causes the image to be less sharply defined than when larger openings are used. For this reason it is always advisable to check the equivalent diaphragm-opening.

Evidently, for either rapid or high-power work a positive lens having a large working-aperture is needed. Suppose it is desired to equip a hand-camera. Street-scenes require a shutter-speed of at least $\frac{1}{25}$ second, and a properly-exposed plate could not be expected with a diaphragm smaller than f/16. A system made of a rapid rectilinear, f/8, positive and a suitable negative lens would be only two-power — not enough to be of value. But if a portrait-lens of f/4 be substituted for the rapid rectilinear the system may be worked at four-power with an equivalent diaphragm of f/16. Equipped with a focal-plane shutter, it becomes a veritable detective camera, capable of photographing with satisfactory size moving objects unusually far away. In a suitable stand-camera an f/4 portrait-lens at full aperture, fitted with a good negative lens, may be employed up to eighteen-power. The equivalent diaphragm of the system at this power is f/72; or practically equal to f/71, the limit previously mentioned. A better appreciation of this high power may be had if one realizes that the orginal image is magnified in the same proportion as an enlargement from a 4″ x 5″ negative to 72″ x 90″, or a superficial enlargement of 324 times.

Anastigmats are well suited for use as positive lenses in telephoto systems. The large working-aperture and fine definition render very sharp images at high power. They have the advantage of always being available for ordinary work if required. Rapid rectilinear lenses used for telephoto work will render sharp images up to six or eight power. In all cases the negative lens must be of good quality, since the magnification of the image is fully as important as its original formation. For average work a negative lens having a focal length about one-half that of the positive lens will be best. For high power with best lenses it may be one-third to one-fifth that of the positive, and thereby obviate the use of an unusually long bellows.

All positive lenses admit a large amount of light that is not used in forming the image but does strongly illuminate the inside of the telephoto tube and bellows, from which places it is reflected to the plate, producing light-fog. It requires a lens-hood consisting of an unusually long, small tube to cut off these rays effectively. A series of diaphragms in the telephoto tube will assist in disposing of any surplus light not intercepted by the hood.

Probably the greatest difficulty in telephotography is that of overcoming vibration. As the optical center is far in front of the lens, a slight movement of the camera serves to displace it a great deal, this in turn making a decided displacement of the image on the plate. It is analogous to the multiplying effect of a lever. A very strong tripod or some solid support will steady the camera unless there is high wind, when it must be sheltered. Frequently, in distant work, the image on the ground-glass will dance, even though the air seems very clear. This is caused by the light from the object passing through unequally heated bodies of moving air. Since it cannot be overcome, the work must be suspended until it is inappreciable. Some difficulty may be encountered in focusing. Not only is there little illumination, but the long focal length often seriously affects the depth of focus for near views, requiring still greater care to secure even definition. The focusing-cloth should be drawn tightly and some time allowed for the eyes to become accustomed to the weak light.

Telephotographs tend to be flat, because of the veiling effect of the haze that is nearly always present in distant views. Orthochromatic plates and a ray-filter will overcome this to a decided extent. However, it may still be best to avoid over-exposure, that prolonged development may increase the contrast. Non-halation plates, though not essential, may often be used to advantage, especially where fine detail is required.

To photograph a distant object on a larger scale than usual is an interesting operation, and a study of the principles involved generally increases the interest. Yet one must not expect too much in the way of results. Generally the view is rendered satisfactory in size and drawing, but seldom seems like a telescopic view unless high-power systems are used. Almost never is there any panoramic effect; on the contrary, the view invariably contains only a small angle.

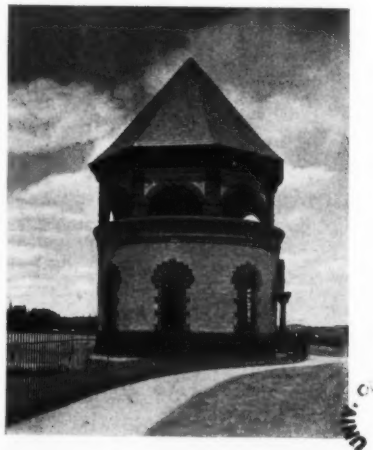
XUM

MISS LENA L.
DUPRAS AND COLAS

Telephotography is designed primarily for photographing distant objects, the resulting picture appearing more as the view itself than is usually the case. A lens-system of great focal length will produce in the picture the effect of a drawing, but this is not serious in the systems generally used. Mountain-peaks, bits of natural scenery, buildings in elevated situations, etc., afford suitable subjects for this class of work. General or broad mountain-views cannot be taken, because they require a much wider angle than can be included. Architectural details of large buildings and sculptured work located in inaccessible places is another important field. The objects taken from a distance are not only of good size, but their beauty has not been impaired by foreshortening. Natural history opens a field by itself. One easily appreciates the advantage of being able to work at a distance from the timid wild folk, and here again the correct rendering of the drawing is particularly valuable. Moderate powers, with their fine graduations, give the pictorial photographer a liberty almost equal to that of the artist. The point of view can be chosen to a nicety, and that power employed which will put on the plate exactly as much of the view as desired. In portraiture the advantage of correct drawing resulting from its use offers a particular field for the telephoto system. There is also a saving in the length of studio needed; for while the drawing of the portrait is dependent upon the distance from lens to subject, the size is dependent upon the focal length, which in the telephoto system is always much longer than the bellows. A considerable drawback is the serious loss of speed, for in portraiture, as nowhere else, speed is an important consideration. However, if photographers and the public desire portraits such as the telephoto system will produce, it is quite possible that the lens-makers can overcome the loss of speed sufficiently to bring it into general use. Until then the expensive portrait-lens of a single excessive focal length will, at least, point the way so that, when a fast telephoto portrait-system, with its variable focal length, is presented it may find a ready field.

The photographs are intended to illustrate the results that may be obtained. "A" is a view taken with a 6¼" rapid rectilinear lens. Here the tower is of satisfactory drawing, but too small to be of interest. "B" is a near view of the same tower taken with the same lens. The tower is of satisfactory size but considerably distorted, especially the roof. "C" is a six-power telephotograph from the same position as "A." Both size and drawing are now rendered satisfactory. The telephoto attachment contained a negative lens having a focal length of three inches and set fifteen inches from the ground-glass; therefore the magnification was $\frac{15}{3} + 1 = 6$-power. The positive lens was the rapid rectilinear used for taking the views "A" and "B." The equivalent focal length was $6 \times 6\frac{1}{4} = 37\frac{1}{2}$ inches. For the views "A" and "B" the exposure was $\frac{1}{50}$ second at f/8. For the telephoto, with the positive lens at the same stop and a four-times ray-filter, the exposure was $\frac{1}{50} \times (6 \times 6) \times 4 = \frac{144}{50}$, or three seconds.

It is to that excellent work Dallmeyer's "Telephotography" that the writer is pleased to acknowledge indebtedness and to refer the reader for further information regarding this subject.



B. NEAR VIEW WITH RECTILINEAR LENS

A. DISTANT VIEW WITH RECTILINEAR LENS

C. 6-POWER TELEPHOTOGRAPH FROM THE SAME POSITION AS A

The Dresden Photographic Exposition

English and American Work

E. O. HOPPÉ, F. R. P. S.

THERE can be no manner of doubt that the International Exposition at Dresden is the finest exhibition of all photography has accomplished that has ever been held. In the pictorial, the scientific and the trade-sections it is unique. Not only its size and comprehensiveness, but the skill with which the exhibits have been marshaled and the way in which it demonstrates the origin, the development and the present uses of photography are, indeed, remarkable. Practically all the nations of the West are represented, while most of them have sent of their best to show photography as an art and a science, and also as the handmaid to all the other arts and sciences. The extent of the grounds, the importance of the several buildings and the *tout ensemble* are highly impressive, and it will be a matter of much surprise if the world in general is not more than satisfied with the results attained.

England is well, but not extensively, represented in most sections, in several of which she shows to much advantage. It may be well to speak individually of the exhibits in the pictorial section, which includes the work both of amateurs and professionals.

English Pictorial Section

The rooms in which this exhibition is held are tastefully decorated, and the effect of delicate coloring and refined ornamentation is delightful. Mrs. Barton, of Birmingham, shows several of her best pictures. Walter Benington has gained a reputation which he does his best to live up to. His work is sometimes strong and effective and then, again, delicate and dainty. He shows among others his successful picture "The Temple of the Sun" and one of his war-horses — "The Church of England." Archibald Cochrane's work is always good and, generally, new. "Mount St. Michel," shown here, is one of his best. A. H. Blake, though he has followed none of those new crazes that have led some of his cotemporaries into profitless by-paths in pictorialism, still keeps up a steady output of pictorial work characterized by excellent composition and genuine artistic feeling. Now and then he gives us a really fine work either of strength, decorative quality or tender and delicate tone. His pictures are always looked forward to and remembered with pleasure. Among his best works shown here are "The Gondola Pool," "The Fountain," "The Medallion" and, above all, "Cannon Street," which last is perhaps the best of the series. It is refreshing to see some of the late Horsley Hinton's fine landscapes, which were such familiar features of past Salons in London. There are certainly some of his best pictures on the Dresden walls, including "Weeds and Rushes" and "Fleeting and Far." Charles Job is another worker who, like Blake, keeps his head and continues steadily on his successful way. He sends of his best, including "Sussex Homestead." Alexan-

der Keighley has been a tower of strength in British pictorial circles for a long time past, and the rejection of his work from the 1908 Salon at once foreshadowed the failure which awaited its organizers. He is represented by "Corpus Christi"— certainly one of the finest pictures in composition and feeling that has ever resulted from a successful snap-shot, even when planned and thought out beforehand according to Keighley's custom — "A Spring Pastoral," "The Bridge" and other works. J. C. Warburg is a force to be reckoned with in British photography. He has, if an uncertain, at any rate a high-class output, which always commands attention. He has a reason for what he does. The Cadbys' work is, as usual, sane, decorative and dainty, and the exhibit would not be representative without their contributions. The "Spider's Web" of Mrs. Cadby and the child-studies of Mr. Cadby are their chief contributions to Dresden.

Eustace Calland is the exact antithesis of most photographers who produce too much; he produces too little. We always want to see more of his work. He sends only two little pictures to this exhibition. Reginald Craigie has always something interesting and, not infrequently, something quite unusual to show. There are pictures of his which are second to none and which will be remembered when many that are talked of now will be forgotten. He was well advised to send "The Bank of England Court." It is probably the finest architectural group that has been produced by photography. Cavendish Morton has a position quite his own in England. Decorative, dainty and convincing, his is a style of work that has no competitors and no imitators over here. He is certainly one of our strong men of today, and he has not joined the extremists. He shows some of his latest and best work. Mr. F. J. Mortimer, who has gained a reputation second to none as the exponent of the sea in storm and calm, has a series of large seascapes. The president of the R. P. S. is not now either a large producer or a large exhibitor, but he sends what is one of his most charming pictures — "Winter Landscape." The photographic world hears little of H. Y. Sümmons and Russell Burchall, but both have done excellent work and are destined to be among the men of the future if they maintain their present gait. Of my own work I must leave it to others to speak. My contributions consist of large multiple gum-prints, all portraits. In size they are the largest in the British section.

American Professional Work

Perhaps the American Professional Section is the strongest exhibit of purely professional work, and the most notable, in many ways, that has ever been organized. It reflects, in the highest degree, the selective skill of Mr. Pirie MacDonald and Mr. Rudolf Dührkoop, the organizers of the section. It is not the work of the mere rank and file of American professionals, but the very pick of the basket, and must certainly be an eye-opener to the world in general as to what the American professional can do when he chooses. It has been remarked by more than one visitor to the exhibition that there is a noticeable sameness and family-likeness in these two hundred and seventy-two professional portraits; they seem turned out in a mould, as if, to keep his patronage, the American photographer did not

dare vary from the prevailing style and character of portrait. Perhaps the style changes from year to year; but it seems to be the laws of the Medes and Persians while it prevails. We in England do not favor retouching so much as is done on the other side, relying more on the softening of focus; and it is interesting to find this method adopted by Mr. E. R. Hutchinson, of Chicago, who aims at a wise restraint and a strong appeal of personality. Mr. Dudley Hoyt has ten portraits of women, well spaced, with excellent tonal rendering of differences of texture and an excellent scheme of lighting. He shows the artistic spirit in a very marked degree, and his work is always dignified and worthy. One of the best readers and translators of character is Mr. Elias Goldensky, who also shows in the amateur section; he knows how to arrange delicate schemes of tone and to suit them to the sitter. Mrs. Gertrude Käsebier's reputation is world-wide and needs no praise to make it greater. She has five frames of distinguished work which principally goes to show a supreme command of her printing-media and that they are her servants and not her masters. Mr. Pirie MacDonald has about twenty-five portraits of men — all closely framed. His magnificent work has hardly received full justice on account of the way his exhibit is spaced. That the work is forceful, strong and individual in a high degree, and that it would be expected from no one else but Mr. Pirie MacDonald, goes without saying. He knows men, he gauges them, hits them off and, so to speak, there they are — the men themselves! Mr. E. B. Core is the Cadby of New York, and he draws one to his child-studies after the manner of the English worker. He shows ten delightful sepia prints of children who seem happy and are free from self-consciousness. Mr. Garo, Boston's society photographer, exhibits a series of rich sepia portraits, mostly women, that are technically superb. The lighting, in particular, is extremely well managed. Very special mention might be made of Strauss, Falk, Edmondson, Tingley and others, did time permit, for there is little work that is not of the highest order and that will not bear careful study. It is not improbable that the visitor will be detained from interest longer in this section than in almost any other, and the professional from other countries will have to acknowledge that his American brother knows what he wants in portraiture and knows how to get it, and that the standard of production is a high one.

The American Amateur Section

The American Amateur Pictorial work is displayed in an octagonal room at the left of the main entrance, and is set off by a scheme of decoration which is quite pleasing and satisfactory. The simple but artistic furniture, the white settees inviting a leisurely study of the works displayed, the finely-toned carpet and the articles of virtu disposed about the room render the general effect quite charming.

It will be possible, of course, to mention only a few of the pictures in detail. The work of Mr. C. F. Clarke is noticeable for its excellent tones and soft yet effective focus. Mr. J. H. Field gets fine atmosphere into his studies, which are poetic in conception. Mr. F. R. Fraprie has four pictures, of which I prefer a

low-horizon subject with delightful reflections of the barge that sails the water. Mr. Elias Goldensky, who also exhibits in the professional section, sends prints here which will not lower his record. Mr. Wm. T. Knox has a fine marine study, while the Parrish Sisters contribute work which, if somewhat weird, is brimful of excellent quality. Mrs. W. W. Pearce does figure-work equaling some of her fine mother-and-child studies which I have seen elsewhere; and this is saying much. Mr. Wm. H. Zerbe, of "Salon" fame, shows two pictures, "Divine Solitude" and "No Breeze, No Tide," which are equal to anything I have seen from him, and his work is pretty well known on this side of the Atlantic. Gertrude E. Man's work I saw last year in the Royal, where it was much admired. She has at Dresden a picture worthy of her reputation in "The Feast of the Immaculate Conception," reproduced in PHOTO-ERA, October, 1907.

I have heard much of the group of young workers — mostly, I believe, of Buffalo — the members of which were not at first taken seriously by most of their countrymen, but who steadily pressed on, improving each other by mutual criticism and along individual lines, till it was found that a new pictorial force had arisen, which had to be reckoned with. Mr. W. H. Porterfield — one of them — has four pictures equal to the best he has shown — pure landscape with distinct poetical treatment. Edward B. Sides, another of this coterie, has three pictures along romantic lines and of fine quality. Of the work by another member — G. Edwin Keller — my choice would be "Sunlight" and "Wayside Stream." Altogether, the members of the Buffalo contingent give a good account of themselves and, like the other American workers who have been referred to here, greatly enhance the value of this section. While the American work, individually and as a whole, commands admiration by reason of sheer artistic beauty, it is criticized for being too somber and low in tone, whereas the English pictures, made in a country noted for its misty atmosphere, are full of sunshine. The simple reason is that workers, live where they may, seek the novelty of atmospheric conditions prevailing in countries other than their own. 'T is human nature the world over.

The exhibit of the International Society of Artist-Photographers, which assumes to embrace the highest and best of pictorial photography in both hemispheres, holds forth in the first large hall to the left as one enters the main building. There are about one hundred and seventy prints, most of which belong to the Photo-Secession, represented here by Miss Brigman, Coburn, Day, Dyer, Eugene, French, Keiley, Seeley, Steichen, Stieglitz and White. The other members of this exclusive set who have pictures here are Annan, Davison and De Meyer, of England; Demachy, of France, and Kühn and Spitzer, of Austria. The impressiveness of this show is undeniable; but to the astonishment of the Germans, who have been led to regard these productions as the flower of the world's pictorial activity, the work of the independent American pictorialists displays fully as much originality, power, and beauty. It is a revelation that will serve to stimulate interest in these hitherto neglected American workers, whose pictures henceforth will be as welcome in European Salons as any of the most exalted rank.

XUM

EDITORIAL

Et Tu, Brute!

WHAT is the matter with the Photo-Secession? Is it true, as has been asserted, that in originality of pictorial invention its members are approaching a decline? In attractiveness of design, but not in the quality of reproduction, the illustrations in the last two or three numbers of its official organ, *Camera Work*, show a noticeable falling-off, although there are many cultivated picture-lovers who declare that the element of true pictorial beauty is lacking in the work of the average Photo-Secessionist. Even Robert Demachy, the distinguished French amateur and also for many years a stanch supporter of the Photo-Secession, has been moved to protest against the latest æsthetic vagaries of this coterie, as seen at the last Salon of the Paris Photo-Club. We quote from M. Demachy's review of this exhibition, which appeared in the *British Journal of Photography* of June 4, 1909:

"Mr. Steichen's style is well known, and his six pictures are excellent examples of his original talent. I inadvertently used the word *followers* just now when I mentioned the relationship between Mr. Steichen and the Photo-Secessionists. The term is ill-chosen; for though Mr. Steichen and the Secessionists now belong to the same creed — that of pure and uncorrected photography — their methods and their results differ. If Mr. Steichen shows manifest personality, the twenty-eight prints that frame his central panel seem to have been printed by the same operator, though they are the children of nine different authors.

"In most of these there is an absolute disregard — or is it contempt? — for those qualities which are considered of paramount importance by artists in other mediums — so absolute, indeed, that some of the pictures require a certain amount of study before it is possible to understand the relative positions of the objects therein suggested. But one notices amongst this representative collection a general and hopeful effort towards originality of composition. Perhaps the effort is too noticeable in some cases; while in others, all important factors have been sacrificed to pure strangeness of arrangement.

"Has the Photo-Secession been influenced by a certain school of painting, whose disciples aim solely at the production of decorative patterns, whose ideal is the Persian-rug design, and which stoops rarely to portraiture because the human frame is too common for its taste? So much so that values and atmosphere are put aside so as to produce absolutely flat patterns, retaining only the projected form of natural objects on one plane. Such methods of rendering nature are far removed from the French conception of art — so far removed that I suppose that my opinion on the subject is unfairly biased. Yet I must say that I prefer the old-time methods used by certain unsophisticated artists who have been dead a long time, it is true, but who have left a name behind them."

XUM

Exploiting the Amateur

THE season when the camerist is most actively engaged enriching his collection of pictorial gems has arrived, and with it come, from various sources, requests for the best fruits of his industry. It is an unfortunate circumstance that among those who seek to profit by the pictorial success of the amateur are many who are animated only by sordid motives and who do not hesitate to take improper advantage of his trusting disposition in the matter of prints or negatives. It therefore behooves the amateur to be on his guard against unscrupulous picture-buyers when negotiating for the sale of valuable prints; for, once having played into their hands, the victimized camerist will have little prospect to obtain satisfaction. The number of unscrupulous concerns which solicit prints or negatives of specified subjects from amateurs is quite large, although it has diminished considerably since PHOTO-ERA began its campaign against these photographic frauds. In order to protect the craft against such piratical concerns, PHOTO-ERA has frequently published lists of absolutely trustworthy publications, firms and individuals desiring to obtain prints of certain subjects either through direct purchase or prize-competitions. Some of the concerns which believe in the principle of obtaining something without a *quid pro quo* now refrain from making their wishes known through the press lest their methods be the more easily discovered and the craft warned. They now make a direct, personal and alluring appeal to individual amateurs whose addresses they know how to procure. Nor is this plan so successful as would appear, for many of the workers thus importuned have applied for advice to PHOTO-ERA, which, after a thorough investigation, has deemed it advisable to suggest a method of procedure similar to the one here outlined.

In most cases solicitors of photographs should be treated with circumspection, although one need never distrust such well-known and highly-respected firms as the Eastman Kodak Company, Thomas B. Jeffery and Company and others from whom the amateur is sure to receive an absolutely square deal. When, however, the amateur is solicited by a firm or individual about whom there is the least suspicion, it is recommended that specimen prints, or prints from which the value of a negative is to be determined, be mutilated in such a manner as to make it impossible to reproduce them successfully. This is following a custom adopted by some professional portrait-photographers when submitting proofs to customers of peculiarly resourceful proclivities. Nor is it always safe to submit copyrighted prints; for, sad to relate, there are concerns which do not shrink from reproducing and marketing even these, and the victimized author of a valuable picture will find it difficult, and sometimes impossible, to obtain redress, and the attempt to do so by a process of law is always annoying and expensive. There are cases on record in which the copyright-notice was successfully removed from a print and the latter reproduced and sold. Elsewhere in this issue will be found reference to the matter of copyright, together with an example of a correct and legal copyright-notice.

OUR ILLUSTRATIONS

OUR frontispiece, by Rudolf Eickemeyer, Jr., was inspired by a few simple verses in a book of child's poems by an English poet. Mr. Eickemeyer does not recall the author, but the lines impressed him strangely and he became possessed of a desire to picture it. That he has succeeded in an eminent degree no one will question. The composition is eloquent in poetic feeling and pictorial beauty. Data: Noon; Seed 26 x plate, 8 x 10; ¼ second exposure; lens of 14-inch focus devised by Mr. Eickemeyer.

It is a pleasure to be able to present to our readers this month two more superb marines by Wm. Norrie. No photographer in Scotland has, to our knowledge, been so successful in depicting the morning and evening aspects of the sea.

"Moonlight at Sea" is one of those night effects frequently made by daylight when the sun is low, the print being, perhaps, a trifle too light to convey an absolutely true impression. The craft in the foreground is well placed, and its dark bulk, contrasted with the lighter tone and smaller size of its distant echo on the horizon, accentuates aërial perspective. Contrast and interchange of light and dark are well exemplified by the intense path of light just beyond the herring-boat. It should be noticed, however, that this path of light is far from being white paper, and that it is always by juxtaposition of light and dark that the effect of extreme light or dark, as the case may be, is obtained in photography, the same as in painting. An important part of the composition is the sky, which has been handled admirably, the time of exposure having been chosen when the lighter clouds would contrast with the nearer sail, making it seem closer at hand, and its distant echo correspondingly farther away. No data are available.

"Outward Bound" shows greater breadth of treatment, and is another successful example of the many beautiful effects to be had by photographing against the sun. The clouds, again, are an important factor in the composition, but the chief interest is found in the water. Note the beautiful curve of the rocks in the foreground, and the great roller in the middle-distance, which leads toward the little sailing-craft. Follow any prominent line in the picture and it brings the vision nearer to this little sail; even the trend of the clouds is in that direction. All this, however, is largely a matter of good fortune, a seeing eye and judicious choice of the psychological moment; but convincingly to record the pearly lights seen on the water requires the feeling and technique of an artist. That, we believe, Mr. Norrie possesses as far as photography is concerned. Data: October, 9 A.M.; good light; Shew Eclipse lens; 6½-inch focus, f/11; $\frac{1}{25}$ second; Imperial Sovereign plate; pyro-ammonia developer; P. O. P. matt print.

In "A March Day" E. M. Astle has given us another of those beautiful interpretations always so full of subtle atmosphere, delicate tones and long range of gradation. Exquisitely decorative in position and lines, the trees are seen by their sharper definition to be in a nearer plane than the opposite shore, which possesses just the right degree of diffusion. The chief charm of the picture, however, lies in the lighting, characteristic of occasional warm days of early spring. Much of the delicacy of the sunlight on the young birches has inevitably been lost in reproduction, for nothing but an actual photograph can hold this subtle quality. Data: 2 P.M.; sunny; B. & L. Zeiss Anastigmat, f/11; ⅛ second exposure; Seed N. H. Ortho plate; metol-hydro developer; black platinum print.

"A Close Decision." High-speed photograph by R. W. Sears, staff photographer of the *Boston American*. It is not often that a decision rendered by an umpire in a baseball game is so effectually verified by the camera as in this instance, and it is an admirable example of the trustworthiness of the camera in the hands of a capable and honest photographer. The stirring moment caught by the camera was a feature of the opening game in Boston between the Boston and Philadelphia American League teams at Boston, April 21, 1909. Speaker, center fielder of the Boston, is in the act of sliding to the third sack. Baker, third baseman of the Philadelphia nine, receives the ball and retires Speaker, according to the decision of the umpire, although the entire Boston nine and the vast audience rose in a tumult of protest. Photographer Sears is noted for his nerve, coolness and success. He usually takes up a position near the back of third base, and has to keep his eye on the batter, lest he be hit by a foul ball (which happened last year), watch the pitcher, and also the runner at second base trying to steal third. Data: Cooke lens; f/4.5; 8¼-inch focus; stop f/8; time, April, 3 P.M.; sun behind cloud; Lumière's Sigma plate, $\frac{3}{8}$-inch slit in focal plane shutter.

"Miss Lena L.," by Dupras and Colas, is the best example of Canadian portraiture we have ever seen. Delicate in tone; graceful in line; truthful in texture; spontaneous in conception, and well nigh perfect in execution, it pleases from every point of view; and the model is so charming that all will admire. The effectiveness of the circular treatment is indisputable. Data: 2 P.M.; plain lighting; Goerz lens; 19-inch focus, used wide open; 3 seconds exposure; Seed plate; pyro-metol developer; Angelo platinum print.

Data regarding the telephotographs on page 73 will be found at the bottom of page 72. These pictures are purely illustrative, and not intended to present any particular artistic effect.

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The Monthly Contest

THAT this competition proved to be popular and brought forth some very attractive prints is shown by our reproductions this month. It is unfortunate that more could not have been reproduced, but many were not suitable for grouping. In the purely pictorial field the work of Paul Lewis Anderson ranks among the best our Guild has produced. It is at times bold, forceful and direct; again, as in "The Gray Mists of Dawn," it is soft, restful and impressionistic; but in either case it is always pictorial. The present instance is beautiful in composition, atmosphere and low-tone harmony. The one unfortunate note lies in the straightness and equal spacing of the near-by branches. It is conceivable that these might have been appropriately spaced by attaching fine threads of proper color to the tips of the branches and fastening them to the ground below. These would have been invisible with the diffused focus employed. Data: May, 7 A.M.; intense sun, but hazy; R. R. lens, f/7.5; 3 times filter; Orthonon plate; $\frac{1}{5}$ second exposure; Dianol developer; Autotype carbon prints.

Bolder both in the subject itself, as well as its leading lines, and far less delicate in treatment, is "The Brook," by John Schork; but for what it purports to be it is quite as successful as the first prize-winner. Few, indeed, could have used a camera here to better purpose than did Mr. Schork, yet it must be admitted that this print owes its distinction more to the attractiveness of the scene itself than to its treatment; while Mr. Anderson's picture depends entirely upon an unusually keen sense of the pictorial, and demonstrates more convincingly the possibilities of finding a good composition in more commonplace surroundings. No data are available.

To the New Englander the flat Middle West seems at first wanting in pictorial material, and, of course, the views must inevitably be different from those made in the Eastern States; yet we all love our own locality best, and in every one there are opportunities for making pictorial and characteristic impressions with the camera. An example in point is the third prize-winner, by George Alexander. It is, at once, typical of the country in which it was made, as well as of the early springtime, the latter being due in large measure to the lack of foliage, the barrenness of the scene and the coldness of the wind-clouds overhead. The effect of clouds upon the sentiment of a picture is well worthy of note on the part of every camerist. Data: May, 6 P.M.; cloudy; on account of the high wind seven exposures of $\frac{1}{25}$ second each were given; stop 32; Cramer Inst. Iso plate; pyro developer; enlargement on Monox bromide.

Knowledge is power—if your knowledge is about the right thing. If you are a photographer read PHOTO-ERA *and become proficient in all phases of your art and its technique. It means dollars and sense for you.*

A Dry-Mounting Hint

EVERY camerist who uses dry-mounting tissue knows how important is the temperature of the heated iron and how difficult it is to form any idea of the actual temperature. If it is too hot the print will be scorched and if not hot enough the tissue does not liquefy. George Bealby makes a suggestion in *The Amateur Photographer and Photographic News* which simplifies this whole matter. Since the temperature of the iron should not fall below 180° Fahr., Mr. Bealby keeps his irons heated by placing them in a tin dish containing about an inch of water, which is kept boiling by a gas-burner below. In this way excessive heat cannot raise the temperature of the irons above 212° Fahr., so that adjustment of the gas-flame is unnecessary and one's whole attention may be given to mounting first with one iron and then another. When lifted from the water the irons become dry instantaneously.

The wages of gin is debt. Moral: Don't give credit to a photographer who uses liquors in excess, and don't be that photographer.

A Developer for Gaslight-Paper

IN the revised edition of the little booklet of the Defender Photo-Supply Co., "The Tipster," is the formula for a new metol-hydro-acetate developer. The formula as given is intended for Defender Argo paper, but any worker may modify it to meet his own requirements.

Expert chemists, after extensive experiments, have found it to be particularly adapted to Argo, and it is used almost exclusively in the Defender Company's operating-room.

METOL-HYDRO-ACETATE DEVELOPER

Water	16 ounces
Metol	15 grains
Hydroquinone	15 "
Sodium sulphite	280 "
" acetate	560 "

Using the above developer, almost any tone can be secured by the addition of other chemicals, as suggested below:

No. 1. For olive-gray tones, add eight minims potassium bromide and fifteen grains hydroquinone to sixteen ounces developer.

No. 2. For gray-olive tones, add eight minims potassium bromide to sixteen ounces developer.

No. 3. For olive tones, add twelve minims potassium bromide to sixteen ounces developer.

No. 4. For deep olive tones, add eight minims potassium bromide and eight grains sodium carbonate to sixteen ounces developer.

No. 5. For brown-olive tones, add eight minims potassium bromide and eight grains metol to sixteen ounces developer.

No. 6. For yellow-olive tones, add eight minims potassium bromide, fifteen grains sodium carbonate, fifteen grains hydroquinone and eight grains metol to sixteen ounces developer.

THE GRAY MISTS OF DAWN
PAUL LEWIS ANDERSON
FIRST PRIZE — THE BROOK IN SPRINGTIME

THE ROUND ROBIN GUILD

An Association of Amateur Photographers

Conducted by ELIZABETH FLINT WADE

This association, conducted under the auspices of PHOTO-ERA, and of which PHOTO-ERA is the official organ, is intended primarily for the benefit of beginners in photography, although advanced camerists are just as welcome and many are numbered among its members. The aim of the association is to assist photographers by giving them information, advice and criticism in the Guild pages of PHOTO-ERA and by personal correspondence. Membership is free and may be obtained by sending name and address to PHOTO-ERA, The Round Robin Guild, 383 Boylston Street, Boston. Send a stamp for complete prospectus.

Vacation-Hints

AUGUST is the month of summer holidays. More people choose this month for their outing than any other month in the year, one special reason being that when one returns to work the very hottest part of the season will be over.

The question which often perplexes the amateur who is planning a vacation is whether it is better to take plates or films for his camera. This seems the simplest solution. If one is intending to move about from place to place, then film is the choice; but if one intends stopping in one place, then plates are to be preferred. If one is going where supplies can be easily obtained, then it is not necessary to take a supply of material; but if not, then one should take plenty of plates or films, for the want of a plate is often many times the worth of it.

The chemicals for developing and toning-solutions come either in powder or tabloid form, with full directions for mixing, so that they are not much of a burden, and do not take up much room even if one carries only a suit-case, so it is wiser to carry a supply of these articles. Ready-sensitized post-cards will also be found a welcome addition to one's photographic collection.

Never start away on a trip or on a vacation with an untried camera, nor with sensitive plates with which one is unfamiliar. The photographic results of such an action are apt to be very disappointing. With a camera one understands, and with plates which one has become accustomed to using, one is pretty sure to get pictures worth while.

When away on an outing always try to get pictures out of the ordinary. Old-time trades and vocations still survive in some of the smaller towns and villages, and one should look out for such subjects. Then there are always picturesque characters in every locality, especially among the older people. Quaint bits of architecture, historical sites, or landmarks, unusual interiors, are also subjects to be sought out and photographed.

Use special caution about wasting plates; and when vacation is over, make from the negatives the very best prints possible, and thus have beautiful and valuable souvenirs of a pleasant vacation.

The Blue-Print Process

BLUE-PRINT paper is the simplest, and also — not even excepting the carbon — the most durable of all photographic printing-processes. More blue-print paper is made and sold than any other sort of photographic printing-mediums, this great demand being the immense quantities used by architects, and for certain commercial uses. It is specially convenient for the reproduction of copies of plans, sketches and designs which are made on tracing-paper and used as negatives.

It has become the custom to deride the blue-print; but it has a few staunch adherents who find in this adaptable paper a medium not to be found in other printing-out papers.

Take the matter of the pictorial record of one's photographic work. The blue-print is the cheapest, the easiest and the most satisfactory. The print for record work should be made with an inch of margin at one end and two inches at the other, the narrow margin being for the title and for any points about the print one desires to remember, and the wider end serving for binding prints together in fifties, with the handy clip-binders.

Blue-prints are the most convenient for sending home a pictorial account of one's outings; for no chemicals are required in the finishing of the print — simply washing in clear water and drying. It is an adaptable paper, too, and can be used for menu-cards, programs, posters, and for all sorts of decorative work where blue is a desirable color.

Another special recommendation is its cheapness. If one sensitizes the paper or fabric the amount is trifling for a large quantity of paper. The commercial paper is very inexpensive, costing only ten cents a dozen for the 4 x 5 size. It can not only be bought in all sizes, but also in rolls, a roll ten feet long — over three yards — and twenty-five inches wide costing only $1.20.

The preparation of the paper is very simple, and any paper — from common writing-paper to the water-color papers and the Japanese rice-papers — may be used for the material, as well as fabrics of silk, linen and cotton. The formula for sensitizing blue-prints has been given in early numbers of PHOTO-ERA, and also in the correspondence column of recent issues. The blue-

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THE BROOK JOHN SCHORK

SECOND PRIZE — THE BROOK IN SPRINGTIME

print sensitizer is made up in two solutions, as follows:

No. 1

Potassium ferricyanide (the red crystals)	1 ounce
Water	8 ounces

No. 2

Ferric ammonium citrate	1¾ ounces
Water	8 "

When ready to use, mix together equal parts of each solution and sensitize the paper by floating it on the liquid or by applying with a soft brush, going back and forth across the paper until evenly coated. The sensitizing must be done by gas or lamp-light, or in a room dimly lighted. Dry in the dark.

The printing is judged by the bronzing of the shadows. When the shadows are bronzed — that is, have a sort of metallic look — the printing has been carried far enough. Wash in several changes of clear water and then dry. It is said that if the print, after development, is placed in clear water and set in the sun for a few minutes the color will be much brighter.

Within a few years the green ferric ammonium citrate has been substituted for the brown, with the result that the paper prints much quicker and the color is a richer, deeper blue. The proportions are one hundred and ten grains of green ferric ammonium citrate to each ounce of water in one solution; and forty grains of potassium ferricyanide to each ounce of water in the second solution. To use, take equal parts of both solutions. A usable quantity to make up is eight ounces of each. They may be mixed and will keep for some time if stored in the dark, but it is better to mix them as needed.

The color of the blue-print may be changed to sepia, black, lilac, and to a dull green. This gives the amateur opportunity to vary the color of his blue-prints; and as in most cases the materials are inexpensive and the manipulation very easy, the experiments are worth trying.

Black tones may be obtained by first bleaching the print in nitrate of silver and then redeveloping with a ferrous oxalate developer. The nitrate of silver solution is made of thirty-six grains of nitrate of silver to four ounces of water. Place the print in the solution and move it about gently by rocking the tray until the image is well bleached. Wash well and then submit it to the fumes of ammonia for a short time. To do this tack the prints or pin them at the bottom of a wooden box, put some liquid ammonia in a saucer and set the box over it, covering the box with a blanket so that the fumes will not escape. Fume for ten minutes, then develop in a ferrous oxalate developer made after the following formula: No. 1. Dissolve four ounces of oxalate of potash in fifteen ounces of hot water. No. 2. Dissolve four ounces of sulphate of iron in six ounces of water, and to each ounce of the solution add one drop of sulphuric acid. No. 3. Dissolve one ounce of oxalic acid in three and one-half ounces of water.

To use, take five ounces of No. 1; one ounce of No. 2; and one-half ounce of No. 3. Place the moist print in this developer and develop until

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a warm brown or sepia is reached. Wash well and dry.

A deeper brown tone is obtained by drying the print and then placing it in a solution of liquid ammonia, using one-half dram of liquid ammonia and five ounces of water. Leave it in this solution until bleached, then place in a bath made of forty-five grains of tannic acid and five ounces of water. This will change the color to a deep brown, and if the shadows are too dull the print may be brightened by applying a coat of artists' fixatif to the print when dry.

A deep green may be obtained by making up a solution of one hundred and fifty grains of borax and five ounces of water. When the borax is dissolved add sulphuric acid drop by drop, stirring the mixture constantly with a glass rod until enough of the acid has been added to begin to redden blue litmus-paper. Next add a few drops of a ten per cent solution of ammonia to neutralize the acid, which is determined by its turning the red color again to blue. When this occurs add twenty grains of powdered catachu, dissolve and filter the solution. Tone the print until it has turned to the desired shade of green.

Lilac and purplish tones may be obtained by placing the print in a thirty-five per cent solution of sulphocyanide of ammonium to which a little acetate of lead has been added. These lilac tones are not strictly permanent, for they are affected by the light and by dampness.

A blue-print may be brightened in tone by immersion in a 3% solution of oxalic acid.

Clear negatives with good detail are the best for blue-prints, a contrast negative giving really the best prints on this paper. Development should take place as soon as possible after the print is made, as the paper does not improve with keeping after the print has been made. If the water in which the print is developed is strong in alkali a few drops of citric acid added to the bath will obviate any bad results.

Summer Charities

THOUGH August is really the "play-month" of the year, yet even the vacationist does not spend all of his time idling about doing nothing. It is a very commendable fashion at summer resorts for the visitors to get up entertainments for the benefit of some one or other of the local charities. Now nothing could be more delightful in every way than a "Delft Bazar," and the Delft could be the humble blue-print used in countless numbers of ways. Fans, lampshades, hand-screens, blue and white transparencies, blotters, paper-weights, fancy boxes, jewel-cases, could be made and decorated with blue-prints, while marines, waterscapes, boats and local scenes could be made into attractive folders, or framed in appropriate frames, or made and mounted as single pictures, and one should not forget the picture postal. The hangings of the bazar would of course be of blue and white bunting, and three or four enthusiastic amateurs would succeed in evolving a most unique entertainment, and one sure to bring fine financial returns.

The Round Robin Guild Monthly Competitions

Closing the last day of every month.

Address all prints for competition to PHOTO-ERA, *The Round Robin Guild Competition, 383 Boylston Street, Boston.*

Prizes

First Prize: Value $10.00.
Second Prize: Value $5.00.
Third Prize: Value $2.50.

Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention, and will be awarded a year's subscription to PHOTO-ERA, *to be presented by the recipient to one of his friends not already a subscriber.*

Prizes may be chosen by the winner, and will be awarded in books, magazines, enlargements, mounts, photographic materials or any article of a photographic or art nature which can be bought for the amount of the prize won.

Rules

1. These competitions are free and open to all photographers, whether or not subscribers to PHOTO-ERA.

2. As many prints as desired, in any medium, mounted or unmounted, may be entered, but they must represent the unaided work of the competitor.

3. The right is reserved to withhold from the competitions all prints not up to the PHOTO-ERA standard.

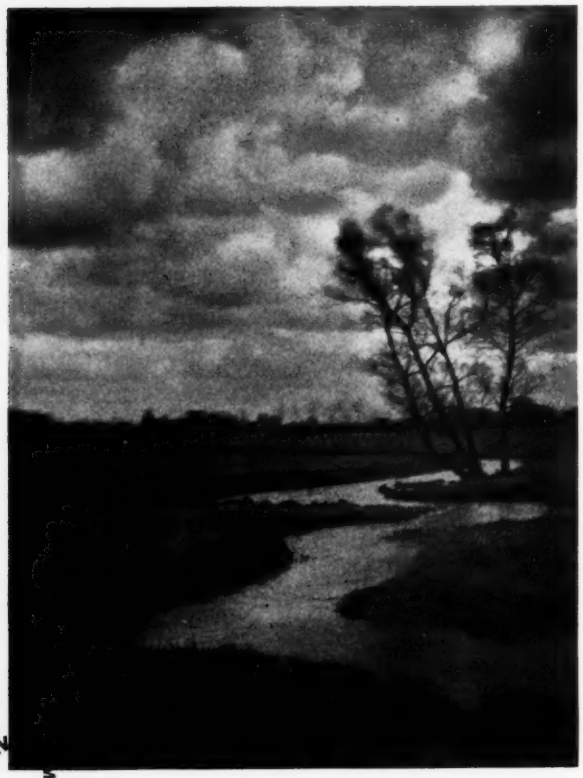
4. *A package of prints will not be considered eligible unless accompanied by return postage at the rate of one cent for each two ounces or fraction.*

5. *Each print entered must bear the maker's name, address, Guild number, the title of the picture and the name of the competition for which it is intended, and should be accompanied by a letter, sent separately, giving full particulars of date, light, plate or film, stop, exposure, developer and printing-process.*

6. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA. If suitable, they will be reproduced, full credit in each case being given to the maker.

Subjects for Competition

July — "Outdoor Pastimes." Closes August 31.
August — "At the Seashore." Closes September 30.
September — "General." Closes October 31.
October — "Vacation-Scenes." Closes November 30.
November — "Glimpses of Foreign Lands." Closes December 31.
December — "Self-Portraits." Closes January 31.



THIRD PRIZE
THE BROOK
IN SPRINGTIME

AN APRIL STORM — GEORGE ALEXANDER

1910

January — "My Favorite Photograph." Closes February 28.
February — "Decorative Treatment of Trees." Closes March 31.
March — "The Seasons." Closes April 30.
April — "Downhill Perspective." Closes May 31.
May — "Sunlight and Shadow." Closes June 30.
June — "Landscapes with Figures." Closes July 31.
July — "Marines." Closes August 31.
August — "In the Country." Closes September 30.
September — "General." Closes October 31.
October — "Scenic Beauties of America." Closes November 30.
November — "Group Portraits." Closes December 31.

Awards — The Brook in Springtime

First Prize: Paul Lewis Anderson.
Second Prize: John Schork.
Third Prize: George Alexander.
Honorable Mention: A. B. Hargett, M. A. Yauch, Dr. Malcolm D. Miller, Leonard L. Cortright, Claude B. Vail, J. J. Kellison, Louis R. Murray, Sam Charles, F. E. Bronson, Sinsaburo Niwa.

Meritorious work was also submitted by A. R. Allen, Dr. M. H. Bell, C. Burnham, H. C. Bancroft, Jr., Mrs. Alice L. Beckt, W. L. Crouch, B. V. Constantinov, Lewis P. Craig, G. L. Embrey, L. C. Hogan, Frank D. W. Loveland, Dr. Walter J. McFeat, Grace E. Mounts, Chas. A. Muller, Robert M. Storms, G. Harrison Truman, Frances H. Toms, A. H. T. Williams, John J. Wing, F. J. Warren, Harry D. Williar.

HONORABLE MENTION
THE BROOK
IN SPRINGTIME

BASKET-FISHING IN JAPAN — SINSABURO NIWA

Answers to Correspondents

Readers wishing information upon any point in connection with their photographic work are invited to make use of this department. Address all inquiries to ELIZABETH FLINT WADE, *321 Hudson Street, Buffalo, N. Y. If a personal reply is desired, a self-addressed, stamped envelope must be enclosed.*

H. E. LEWIS.— To obtain a gloss on picture post-cards, use a heavy ferrotype plate; see that it is perfectly clean, then swab it over with a solution of paraffin and benzine — ten grains of paraffin in one ounce of benzine. Rub the plate with a soft cloth, take the prints from the water, lay them face down on the ferrotype plate and squeegee them to it with a rubber squeegee. Absorb the superfluous moisture with clean blotting-paper. When the prints are dry they will peel from the plate with a glossy finish. Take care that the plate is not put in a warm place; otherwise, the gelatine will soften and stick to it. Clean the plate and swab with the paraffin between each batch of prints.

THOMAS BRADY.— Yes, there are several makes of copying-cameras on the market. If, however, your camera-bellows has a long enough draw you can copy with your own lens without going to the expense of buying a camera specially for copying. If, however, you intend doing much copying, the camera made specially for that purpose is, of course, the most convenient.

GEORGE N. COMLY AND OTHERS.— In sending prints to the monthly competitions they should be finished in the most artistic manner one is capable of doing. Glossy prints are better

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for reproduction, but are not artistic; and as artistic merit is one of the points on which pictures are judged, the finish of the print, as well as subject and treatment, is taken into consideration.

H. H. D.— Your request for the proper toning and treatment of blue-prints is answered in the article in this number. As many other Guild members had asked for the same information, and as it was too long to be incorporated in "Answers to Correspondents," a special article has been written. No, the blue-print does not reproduce well. It is debarred from the competitions for that very reason.

L. D. R.— The glycin developer which you ask about would not develop plates in an hour. There was evidently a mistake in the printing of the directions. It would require from eight to ten hours to develop the plate; and as glycin does not stain, there would be no harm in leaving the plates in the developer for that length of time.

W. R. L. D.— You will find the W. D. Platinum made by the Eastman Company of Rochester, N. Y., the paper which will meet your requirements of a water-developed paper in black-and-white tones. This paper does not keep very long, so it would be wiser for you to have your dealer order direct from the makers, so as to ensure fresh paper. The tones resemble those of ordinary platinum, but the paper is very much cheaper.

JANE R. D.— The greenish tone of your gaslight prints is doubtless due to too much potassium bromide in the developer. Experiment and find the time of exposure for normal development. Then you need not use the restrainer to hold back the image, nor need you prolong the development to bring out detail. A few experiments watched and timed carefully will save you much vexation in gaslight printing. Have the negative always at a uniform distance from the light, and you will thus get uniform results. When you have ascertained the time necessary for printing a negative make a note of it on the outside of the negative envelope as a guide to future printings.

BERTHA B.— To intensify a carbon print dip it in a solution of permanganate of potash, using twenty grains of the potash to an ounce of water. Wash and dry, and if the print is still too weak, repeat the process.

EDWARD S. B.— A clearing-bath for platinum paper is made of one ounce of hydrochloric acid to sixty ounces of water. Get the chemically pure (C. P.) acid, which is perfectly white. If of a yellow tinge it is not pure and may injure the prints.

CHARLES M.— An ink for writing or labeling lantern-slides may be made by dissolving in gum-arabic water zinc white such as is used by artists. The gum-arabic water should contain about forty grains of the gum arabic to an ounce of water. Add the water to the paint, rubbing it smooth with a knife or flat stick, until of the right consistency. It should be thick, but not too thick to flow from the pen. A little experimenting will give you the proper proportions.

D. L. T.— To remove intensification from a plate soak the plate in a hypo solution, one ounce of hypo to four ounces of water. Wash well, and the intensification can be repeated if desired.

S. F. HARD.— An orthoscopic lens is a lens which reproduces lines straight. The word means the same as "rectilinear," for which in this case it is evidently used. Yes, you may send enlargements from small negatives for the monthly Guild competitions.

HAROLD S.— To secure an international copyright one must comply with the laws of the "country of origin," that country being the one where the idea originated, or the country of first publication.

T. G. L.— To clean your soiled platinum prints made on rough paper, dissolve a teaspoonful of powdered alum in one-half pint of hot water. When cooled, add enough of this solution to a quantity of flour until you have a half solid paste, but not too stiff. With a soft brush apply this paste to the print, brushing the mixture well into the paper, then wash off under the water-tap with a gentle stream of water. The paste will carry off the dirt on the print and it will be as clean as when first made.

Print-Criticism

Address all prints for criticism, enclosing return postage at the rate of one cent for each two ounces or fraction thereof, to ELIZABETH FLINT WADE, *321 Hudson Street, Buffalo, N. Y. Prints must bear the maker's name and address, and should be accompanied by a letter, sent separately, giving full particulars of date, light, plate or film, stop, exposure, developer and printing-process.*

"SUNSHINE AND SHADOW," B. C. L.— This picture shows in the foreground an archway through which are seen glimpses of a sunny court. The foreground is dark, owing to the heavy shadows from the building, but the glimpse into the court gives the necessary high-lights and life to the picture. The point of view in this picture was not well chosen. A pillar cuts off the curve of the archway at the left and makes the opening look as if unfinished, and almost conveys the impression that the part of the arch hidden by the pillar is without support. This is a difficult subject, and in order to get a good effect the time of making the picture should be chosen when the strongest light falls on the rough stone and gives a little detail, instead of, as now, making it simply a black outline. The scene in the court is interesting, as it shows a fountain and two or three children playing near.

"NO THOROUGHFARE," H. G. S.— This picture is very aptly named, for there is certainly no thoroughfare through the tangled mass of bush and briars and young saplings which make

A FEW HONORABLE MENTION PRINTS — THE BROOK IN SPRINGTIME

From Left to Right: "The Sluggish Brook," Claude B. Vail; "The Brook in Springtime," M. A. Yauck; "Rice Creek," Leonard L. Cortright; "Springtime," A. B. Hargett; "In the Glorious Springtime," J. J. Kellison; "The Brook — Arnold Arboretum," Malcolm D. Miller, M.D.; "Winding Brook," Louis R. Murray.

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up this picture. This might do for a puzzle picture, but the subject could never by any stretch of the imagination be made to convey any idea of artistic merit. The lines are specially distracting, and the eye wanders here and there seeking for a spot on which to rest, but finding none. Now, doubtless, there was something attractive about this locality, with its varied tints of green in the different shrubs and plants, and the browns and reds of the stems and stalks, but translated into black and white it seems without form, and void. Many pictures of similar character come to the editor's table, and the advice always given is: "When tempted to waste a plate on such a subject — don't !"

"A Picturesque Corner," M. R. E.— This is a charming scene showing a glimpse of a stream of water, the banks in the foreground fringed with tall rushes and swamp grasses, among them stalks of thoroughwort in blossom. On the opposite bank, which slopes down in a gentle incline to the water, stands a tall tree, its branches half dead and sharply defined against the sky. This seems to be the principal object in the picture, for the lines lead up to it, though the tree itself is somewhat in the middle-distance. At the left of the picture the stream curves away and is lost to view behind a thick growth of shrubbery. This is one of the most artistic bits of landscape work which has been sent in for criticism for some time. The sky is specially well managed and is full of soft clouds with delicate shadows. There are no strong highlights nor dense shadows in the picture, and the half-tones melt into each other almost imperceptibly.

"Study of a Head," C. S. O.— This is a picture of the head of a young woman, with a filmy sort of material like chiffon wound many times about it, one end brought down and tossed over the shoulder. This print is from an excellent negative, for all the detail, while distinct, is very soft and pleasing, but the picture itself is not of special interest. One reason is that the face has not that delicacy of feature which would accord with the white, filmy draperies wound about it. It would be more appropriate for the subject to be garbed in some material with long, flowing lines — a study which would show the figure, rather than only the head. The hair, what is seen of it, is very beautiful, and, loosely arranged, would be very artistic. The curls and frizzes that are seen at one side are inharmonious with the rather severe countenance. The editor would like to see this same subject portrayed in the way suggested. There seems to be an excellent opportunity for an interesting portrait.

Plate Speeds for Exposure-Guide on Opposite Page

Class 1/2

Lumière Sigma
Lumière Non-Halation Sigma

Class 1

Ansco Film, N. C. and Vidil
Cramer Crown
Cramer Crown Non-Halation
Cramer Instantaneous Iso
Cramer Inst. Iso Non-Halation
Cramer Isonon
Cramer Trichromatic
Defender King
Defender Ortho Inst.
Eastman N. C. Film
Ensign Film
Hammer Special Extra Fast
Imperial Special Sensitive
Imperial Orthochrome Special Sensitive
Kodoid
Magnet
Premo Film Pack
Seed Gilt Edge 27
Standard Imperial Portrait
Standard Polychrome
Stanley Regular

Class 1 1/4

Cramer Banner X
Cramer Banner X Non-Halation
Eastman Extra Rapid
Hammer Extra Fast
Hammer Extra Fast Ortho
Hammer Non-Halation
Hammer Non-Halation Ortho
Seed 26x
Seed C. Ortho
Seed L. Ortho
Seed Non-Halation
Seed Non-Halation Ortho
Standard Extra
Standard Orthonon

Class 1 1/2

Lumière Ortho A
Lumière Ortho B
Lumière Panchro C

Class 2

Cramer Medium Iso
Cramer Medium Iso Non-Halation

Class 2 1/2

Cramer Anchor
Hammer Fast
Seed 23

Class 4

Stanley Commercial

Class 5

Cramer Commercial
Defender Non-Halation Plain
Defender Non-Halation Ortho
Defender Ortho Slow
Hammer Slow
Hammer Slow Ortho

Class 8

Cramer Slow Iso
Cramer Slow Iso Non-Halation

Class 12

Defender Queen
Seed Process

Class 100

Lumière Autochrome
Lumière Red Label Slow

The Round Robin Guild Exposure-Guide For August

COMPILED BY PHIL M. RILEY

UNDER this caption a brief table of exposures will be given in each issue for the guidance of Guild members during the following month. While the figures are indicative only, they will be found approximately accurate for the assumed conditions they have been applied to. If the exposure-times given are not considered imperative, but as suggestions, possibly to be varied slightly at the discretion of the worker, these tables will prove of great benefit to all who use them.

The table below gives the exposures required by the different subjects and plates mentioned during the month of August on any fine day between 10 A.M. and 2 P.M. when the sun is shining brightly and the lens is working at f/8, or U. S. No. 4.

Double the exposure if the sun is obscured but the light is fairly bright, or if f/11, U. S. No. 8 is used; also from 8 to 9 A.M. and 3 to 4 P.M. Treble it when the light is rather dull, and from 7 to 8 A.M. and 4 to 5 P.M. Increase it four times when there are heavy clouds and very dull light, or if f/16, U. S. No. 16, is used. For f/5.6, U. S. No. 2, give half. From 9 to 10 A.M. and 2 to 3 P.M. increase the exposure one-fourth. From 6 to 7 A.M. and 5 to 6 P.M. increase it five times.

SUBJECTS	PLATES (List on Opposite Page)											
	Class ½	Class 1	Class 1¼	Class 1½	Class 2	Class 2½	Class 4	Class 5	Class 6	Class 8	Class 12	Class 100
Studies of sky and fleecy clouds	1/1280	1/640	1/512	1/400	1/320	1/256	1/160	1/128	1/100	1/80	1/50	1/6
Open views of sea and sky; very distant landscapes; studies of rather heavy clouds	1/640	1/320	1/256	1/200	1/160	1/128	1/80	1/64	1/50	1/40	1/25	1/3
Open landscapes without foreground; open beach, harbor and shipping-scenes; yachts under sail; very light-colored objects; studies of dark clouds	1/320	1/160	1/128	1/100	1/80	1/64	1/40	1/32	1/25	1/20	1/12	2/3
Average landscapes with light foreground; river-scenes; figure-studies in the open; light-colored buildings and monuments; wet street-scenes	1/160	1/80	1/64	1/50	1/40	1/32	1/20	1/16	1/12	1/10	1/6	1 1/3
Landscapes with medium foreground; landscapes in fog or mist; buildings showing both sunny and shady sides; well-lighted street-scenes; persons, animals and moving-objects at least thirty feet away	1/80	1/40	1/32	1/25	1/20	1/16	1/10	1/8	1/6	1/5	1/3	2 2/3
Landscapes with heavy foreground; buildings or trees occupying most of the picture; brook-scenes with heavy foliage; shipping about the docks; red brick buildings and other dark objects; groups outdoors	1/40	1/20	1/16	1/12	1/10	1/8	1/5	1/4	1/3	2/5	3/5	5 1/3
Portraits outdoors in the shade; very dark near objects	1/20	1/10	1/8	1/6	1/5	1/4	2/5	1/2	3/5	4/5	1 1/5	11
Badly-lighted river-banks, ravines, glades and under the trees	1/10	1/5	1/4	1/3	2/5	1/2	4/5	1	1 1/5	1 3/5	2 2/5	21
Average indoor portraits in well-lighted room, light surroundings, big window and white reflector	3/10	3/5	3/4	1	1 1/5	1 1/2	2 2/5	3	3 3/5	4 4/5	7 1/5	64

In order to make the exposures as accurate as possible after the final multiplications, all fractions accompanying whole numbers have been allowed to remain in this table, except when the whole numbers were so large that fractions might be disregarded as negligible. In such cases approximate figures have been given. Shutters will not always give the exact exposure required, but the nearest speed may be used if it is approximately correct. When the nearest speed is too short open the diaphragm a little; when too long, close it a little. Let the exposure be a little too long rather than too short, and the more contrast there is in the subject the more it may be over-timed. Over-exposure, unless excessive, can be controlled in development, but under-exposure will not give a satisfactory negative.

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THE CRUCIBLE

A MONTHLY DIGEST OF FACTS FOR PRACTICAL WORKERS

With Reviews of Foreign Progress and Investigation

Conducted by PHIL M. RILEY

Readers are encouraged to contribute their favorite methods for publication in this department Address all such communications to Phil M. Riley, 383 Boylston Street, Boston

A Few Hot-Weather Tips

SUMMER is the time when most photographs are made by amateurs, yet it is the time when development and the other processes give one the most trouble. This is, of course, due to the prevailing high temperature not only of the air, but of the water in midsummer. I think I am safe in assuming that most amateurs these days make use of tank-development, particularly if films are used. In this they are wise. Excellent developers may now be had in packages ready to be dissolved in the proper quantity of water. By adopting this method of making fresh solutions as needed it is an easy matter to use part ice-water and part tap-water, and thus adjust the temperature properly. A warm developer is likely to cause frilling, and to soften the emulsion so badly that it may unavoidably become scratched while washing. A thermometer is the photographer's best guide in summer, and no work should be attempted without its affirmative counsel.

A tank full of developer at sixty or sixty-five degrees will not warm greatly in the twenty minutes required for its use if kept in a fairly cool place. If a good breeze can be found through the house, that is the place in which to work. Better still, wait until evening, when it is cooler everywhere. Amateurs can also, as a rule, wait for a rainy day during which to develop, thus avoiding excessive heat; and it is worth while to do so.

It is well to test the temperature of the developer after use as a guide to future work. If it has warmed five degrees in twenty minutes some further means of cooling it should be adopted in future. An earthern jar with a cover, which may be filled with water the same temperature as the developer, is a convenience. In this the tank may be immersed and covered. Here it is protected from the outside heat by the earthenware and the water, which is now so great in volume that it cools very slowly.

Those who must use dark-rooms should give attention to the matter of ventilation. Light-proof openings should be provided for an intake of cool air near the floor and an outlet of hot air near the ceiling. If electricity is provided in the house an electric fan can be used to good purpose. Nothing will clear and cool the atmosphere so effectively as a fan placed in a direct line between the inlet and outlet openings. It will also be of great service in drying negatives quickly. Users of dark-rooms will do well to choose stormy days and evenings for their work.

With the latest improved plates and films frilling is not often a source of trouble, if the solutions can be kept fairly cool. If they cannot it is well to adopt some developing-agent such as amidol, which requires no alkali, as it is that constituent in the usual formula which aids frilling.

The developer, fixing-bath and wash-water should be kept within two or three degrees of being alike. Differences of temperature cause frilling. This danger, however, is greatly diminished by the use of formalin and an acid salt in the fixing-bath. One ounce each of formalin and potassium metabisulphite added to a gallon of the usual 20% hypo furnishes an excellent summer fixing-bath for plates, films, gaslight and bromide papers. This solution, like the developer, can be kept cool by immersing the fixing-box in a jar of cool water brought to the right temperature with ice. Formalin also facilitates rapid drying, which is important if streaks are to be avoided. Always dry negatives in a cool, shady place. A breeze, natural or from an electric fan, is an advantage.

Water from city mains is usually rather cool if allowed to run for some time, and, even though a little warmer than the chemical solutions, will probably do no harm while washing negatives if they have been hardened with formalin.

A Fixing-Bath for the Tropics

DIEGO F. DE LA PEÑA, of Tlacotalpan, Mexico, one of the most successful photographers in our sister republic, sends us the following formula, which he states has been very valuable in his practice, rendering the film of plates very hard and avoiding all hot-weather troubles. Its use has been confined almost wholly to Seed plates, but there is every reason to suppose that the bath should prove equally effective with other brands.

A

Water	1,500 c. c.
Hypo	500 grams

B

Water	500 c. c.
Sodium bisulphite, dry	25 to 30 grams
Chrome alum	25 to 30 "

The amount of bisulphite and alum varies with the weather conditions.

Pour B into A, stirring at the same time.

Control with Gaslight Paper

In a recent issue of *Photo-Notes* there appeared a valuable article by T. H. Greenall describing methods of control in printing and developing gaslight papers, which render it unnecessary to waste a single print so long as underexposure is avoided. By his method of tentative development widely varying exposures produce almost identical results, except for color, which ranges from warm black to sepia, in this respect being suggestive of the new Ensyna paper. Moreover, these colors are for most subjects more pleasing than the cold black of ordinary development. Thus it will be seen that great latitude is permitted in exposure, with the assurance of good gradation in the high-lights and pleasing color and clearness in the shadows.

"Having roughly sorted my negatives into thin, medium and dense, I expose a batch of six at once, allowing considerably more exposure than the same would require to yield a black print in the ordinary way. Forty to sixty seconds by incandescent gas at ten inches is about right for average negatives, dense negatives having longer; but the exact exposure is unimportant unless a particularly warm or cold color is specially wanted. As an example I made four prints of the same negative on 'Rotox' postcards, giving twenty seconds, forty seconds, sixty seconds, and ninety seconds respectively, at ten inches from an incandescent gas-flame, and there is very little difference in color, while the gradation and density are practically alike in all. An exposure of three minutes would have given warm sepia; that is the only difference.

"As the prints are exposed they are placed in the following solution at normal temperature (60° to 65° F.):

Pyrocatechin	2 grains
Hydroquinone	2 "
Sodium sulphite	20 "
Citric acid	2 "
Potassium bromide	1 grain
Potassium carbonate	20 grains
Water	6 ounces

In my own practice, when I have many prints to make I dilute this further and place the prints upright in the diluted developer in a tank. After two or three minutes in the concentrated, or ten or fifteen minutes in the tank, developer, I examine the prints as regards their lighter tones. A print which already looks pinky all over must be left to finish out in the restrained developer, as it has had long exposure, and will give a warm-colored print of good gradation if left until it appears very strong and rich before fixing. But the majority of the prints should show either nothing at all, or a pinky deposit in the shadows only, after the above time in the restrained developer; and these are to be taken out singly as the shadow detail appears, rinsed under the tap back and forth for a few seconds, and finished in the following eikonogen solution. This, it will be observed, contains no alkali, and it will bring up the high-lights even when the exposure has been one-fifth or one-tenth that required for a sepia print; at the same time, it will not block up the shadows:

Eikonogen	10 grains
Sodium sulphite	60 "
Water	2 ounces

This solution may be used repeatedly, provided the prints are always rinsed as they are transferred to it. As to the proper moment to make the transfer, the general rule is to leave the prints to gain some shadow detail in the restrained developer, and use the eikonogen for finishing off; but a print from a contrasty negative should be changed earlier than one from a flat negative, which should be left a longer time in the restrained developer to gain increased contrast.

"The eikonogen alone would give an extremely soft and thin result, while the restrained developer alone would give either nothing, or 'soot and whitewash,' except in the case of those long exposures already referred to. Fixing is in the usual acid fixing-bath, and it is well to bear in mind that blacks and cool sepias do not lose as much in fixing as do the warm sepias before mentioned.

"Finally, should it be desired to have 'red-chalk' prints, it is necessary only to give long exposure and use the restrained developer with a little extra bromide. The eikonogen may be used to correct errors in exposure in this case also; therefore no print need be wasted — unless, of course, the negatives are hopelessly at fault to begin with."

Dry-Plates vs. Gas-Mantles

Not long ago, states the *Galesburg Mail*, a New York photographer learned to his sorrow that the gas-mantle emits a ray. He had stored away a large number of plates in a dark place and inadvertently left a gas-mantle near them. There they remained for a month, and when the photographer took them out he found that all were fogged. The mantle contained thorium, a radio-active substance which penetrates a cardboard plate-box as easily as it goes through glass.

Restoring Cracked Negatives

Charles Macnamara describes, in *The Amateur Photographer* for May 25, 1909, a method of remedying a cracked negative which is very simple. It applies only to negatives which have one single, clean crack across some portion of them. When such negatives are held at right angles to the axis of the eye and in the right light the crack practically disappears. Mr. Macnamara notes this exact position in a soft, diffused light, and then makes there a transparency by contact. Little, if any, sign of the crack will be seen in this if the proper angle has been secured. Should any trace remain it will be obliterated in the negative which must then be made by contact or enlargement from the positive before prints may be taken.

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PHOTOGRAPHIC PATENTS

Abstracted by PHIL M. RILEY

Printed copies of patents are furnished by the United States Patent Office for five cents each
Address The Commissioner of Patents, Washington, D. C.

May 18, 1909

922,254. PORTABLE DARK-ROOM FOR PHOTOGRAPHIC PURPOSES. CHRISTIAN BURR and HENRY F. THOMAS, Natrona, Penn.

A compact folding dark-room for loading holders, developing plates and printing. The usual ruby-glass window and arm-holes are provided, as well as a hood to cover the head and shade the window from too bright light. The chief feature of the apparatus consists of the four folding legs which permit of its being set up anywhere at the right height for use.

922,302. KINETOGRAPHIC APPARATUS. CLAUDE ANTOINE LUMIÈRE, Paris, France.

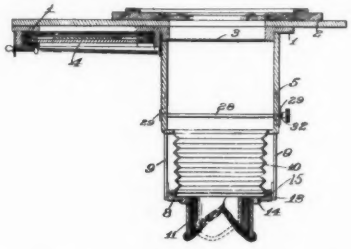
In the projection of kinematographic pictures the time required to close the shutter and bring the next section of film into place causes a period during which the screen is not illuminated. This recurring in rapid succession causes flicker and tires the eyes. The present invention is intended to eliminate these obscure periods, ensuring constant and equal illumination at all times. The same type of apparatus as is used for projection can also be employed for making the original exposures, and, as the usual number of images photographed per second can be doubled, the movements of figures and other objects will be much more natural. The means employed for obtaining these results consists in arranging the successive pictures on two films unwinding parallelly or arranged alternately on the two sides of a wide band of film. Two projection-lenses and shutters are used, the latter being combined and regulated in such a manner that the image is taken alternately first in one series and then the other, a picture in one series being displaced by the height of a picture while a picture in the other series is being projected. As one shutter begins to mask its objective the other shutter begins to uncover its objective, so that the masked area of one is always equal to the exposed area of the other. The screen thus receives a constant quantity of light corresponding to the full aperture of one objective. During a very short period the picture projected is composed of variable elements of two successive images illuminated through a portion of their respective objectives; but by reason of the rapidity of the shutters the connection between the two partial images is hardly perceptible, and the two successive images, taken at intervals of time twice as close together as in the ordinary processes, present very slight differences.

922,356. PHOTOGRAPHIC PLATE-HOLDER. OTHNIEL H. TALBOTT, Eldorado Springs, Mo.

An automatic device for centering plates within a holder. It consists of small metal jaws movable back and forth in guideways on the back of the holder, the jaws engaging both sides and ends of the plates and being drawn together from opposite sides by spiral springs. As these springs tend to hold the jaws in their innermost positions, the plate is automatically centered in the holder with equal spaces at the sides both longitudinally and transversely.

922,411. FOCUSING-ATTACHMENT FOR CAMERAS. WM. F. FOLMER. Assignor by mesne assignments to Eastman Kodak Company, Rochester, N. Y.

The top-plan sectional drawing shows the device to be a focusing-hood attached to the back of portrait-cameras, thus furnishing a convenient substitute for the troublesome focusing-cloth. The bellows 10 enables the sight-opening to be racked to proper distance from the ground-glass screen



3 to suit the photographer's eyes. The portrait-attachment to which the hood is applied embodies a horizontally adjustable slide 1, mounted in ways 2 on the camera-back and provided at one side with a focusing-screen 3 and at the other side with a plate-holder 4, the screen and holder being adapted to be brought alternately into the field of the lens by adjustment of the slide 1.

May 25, 1909

922,743. AUTOMATIC LIGHT-SHIELD FOR MOVING-PICTURE MACHINES. DALLAS C. WOODWORTH, Chicago, Ill.

In the ordinary moving-picture machine the film runs in the film form a loop between the feed-sprocket and guide-roller above the projection-aperture. Should the free feeding of the film be interrupted the loop would enlarge rapidly. This fact is utilized in this patent by arranging a shutter which will be closed by the enlargement of the loop, thus closing the light-aperture and preventing the intense heat of the lamp from igniting the stationary film.

922,908. PHOTOGRAPHIC DRY-PLATE. LOUIS HUSSON, Philadelphia, Penn.

The invention relates to the preparation of sensitive plates adapted to print in different colors, and its object is to render the plates more sensitive to particular colors with the addition of certain dry-colors without the employment of color-filters as heretofore. An ordinary orthochromatic plate is coated first with a repellent made of wax, spermaceti, paraffin, stearic acid or the like, dissolved in a volatile liquid such as benzin, benzole or ether. This coating prevents the color-solution, to be applied later, from mixing with the emulsion of the plate. When the coating is dry it is polished with a chamois-skin and then coated with a col-

oring-solution appropriate to the deepness of the color desired on the plate, the solution being composed of coloring-matter dissolved in alcohol, ether, acetone or other volatile liquid, with the addition of glucose or glycerin to increase its body. As this solution dries two distinct coatings are produced, the resultant plate permitting a perfect action of light through to the emulsion and being adapted to make negatives for three-color half-tones on copper, to transfer to stone for lithographs or to make colortypes.

923,019. COLOR-PHOTOGRAPHY. EDGAR CLIFTON, Enfield, England.

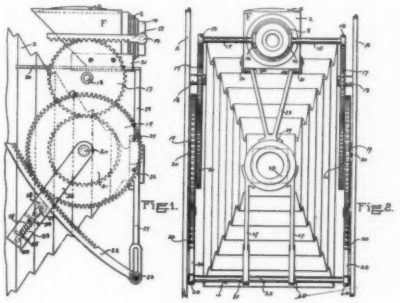
A two, three or four-color method of color-photography in which the assemblage of the single elements produces the colors of nature when mounted together to form a transparency or a print to be viewed by reflected light. It consists in preparing three carbon transparencies in color, superimposing them temporarily to constitute the heliochrome, adjusting the combined effect by modifying any of the color-records with suitable dyes, as suggested by inspection, and finally registering all the color-elements in contact. In the procedure itself there is practically nothing new, the chief feature of the patent relating to the method of temporarily constituting in register and viewing the finished heliochrome so as to determine what modifications, if any, are to be made in order to produce true color-effect. The single carbon transparencies are arranged one over the other in a composite frame consisting of a sufficient number of carriers provided with means for bringing all into exact register. Since the effect must be tried while the transparencies are still wet, they cannot be brought into contact, and the spaces between them as well as the thickness of the glass on which they lie make it necessary to view the transparencies by the use of a special device. This consists of a telescope adjusted at a convenient distance. In the telescopic axis are interposed reflectors for shortening or folding the range, while an eye-piece of the diagonal type is located near the registering-frame so that the adjusting-handles will be convenient to the operator.

923,030. PHOTOGRAPHY. FRANK W. DONISTHORPE, Bath, England.

The method consists in rendering portions of a photographic negative unsaturable to aqueous dyes by loading the more aqueous parts of the negative with pigmentary matter, soaking the negative in an aqueous dye and then bringing the negative into contact with a gelatine surface. The negative to be printed is immersed for ten minutes in what is practically a vanadium toning-bath. This intensifies it a little and turns it to a bluish green. In so doing a deposit is made on the image which must be absorbed by the gelatine. This hardens or blocks up the gelatine and decreases its power to absorb moisture in proportion to the opacity of the negative in its various parts. The plate is then washed and immersed for ten minutes in a dye solution of the desired color, which is absorbed considerably by the gelatine which has been toned but little, less where there has been more toning and so on in proportion. After rinsing in cold water the plate is printed from by contact with gelatine-coated paper previously soaked in cold water for about a minute. Ten minutes' contact is sufficient, and the paper may then be stripped from the negative, and the paper then bears a positive impression in dye from the negative. The latter may be redyed and used over and over again, the redyeing taking only about three minutes. Detailed description in PHOTO-ERA for August, 1908.

923,173. CAMERA. AUGUSTUS M. HENERY, New York City.

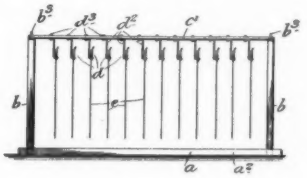
This invention aims to provide intermediate means adapted to create a continuous focal accord, under a series of actuations, between the camera proper and the view-finder, thus enabling the operator to see in the view-finder, during exposure, the scene being received within the camera, and to



determine whether it be in focus. In use, the lens-case 26 is pulled forward, thus revolving the gear 19 along the rack 22. The gear 21 also turns with it, so that the gear 17 and rack 13 are moved at the same time, so that the focus of the finder is the same as that of the camera. Once adjusted in focal accord, by providing gears of proper size, the relation will be permanent and exactly accurate.

923,481. DEVICE FOR DRYING PHOTOGRAPHIC PRINTS. ARTHUR M. BANKS, Brooklyn, N. Y.

An adjustable frame for drying films of different widths. The side elevation shows the arrangement of clips d fastened to the bar C^1 by the pins b^3, which are received by



holes in the bar. Two of these bars, one at each side of the film, are used, and, as there are several spaced pins b^3 across the upright b, the distance between the bars may be adjusted to any width of film.

923,511. CHECKING-APPARATUS FOR SYNCHRONOUSLY RUNNING KINEMATOGRAPHS AND TALKING-MACHINES. JULES GREENBAUM, Berlin, Germany.

An electrically-operated device for synchronizing the facial movements in a kinematograph picture with the corresponding conversation from a talking-machine. A disk carrying a contact-point revolves with the main shaft of the

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kinematograph and another similar disk revolves with the main shaft of the talking-machine. Against these disks press sliding brushes which close two separate circuits once each revolution of the shafts as the contact-points are reached. Each electric circuit excites an electro-magnet to the armature of which is attached a pawl which acts upon an adjacent ratchet-wheel much like the escapement of a clock. In this way both ratchet-wheels are revolved by the repeated excitation of the respective magnets, and, being geared to concentric shafts, one solid and another tubular, on which are attached pointers like the hands of a clock, the hands also revolve. Thus, one pointer indicates the speed of the talking-machine; the other, that of the kinematograph. Both move around a dial step by step; if they keep exact pace one above the other the machines are operating in exact synchronism; but when one lags behind, its speed must be increased or the speed of the other decreased. Electric lamps of different colors are also provided, one of which burns when the two apparatuses are working synchronously, while another commences to glow and the first is extinguished if the kinematograph runs too fast, and still another commences glowing while the second lamp goes out if the talking-machine runs faster than the kinematograph.

923,542. PHOTOGRAPHIC LIGHT-DIFFUSING APPARATUS. N. Losey, Indianapolis, Ind.

A compact folding device for reflecting and diffusing the strong light of an arc-lamp so that the subject may be enveloped in soft yet actinic light without strong shadows being cast as with direct artificial light. The standard is high enough so that the lamp may be hung through an opening in the top of an inclined umbrella fastened to the standard slightly higher than the subject. A reflector throws the light back within the umbrella, from whence it is again reflected upon the subject.

923,589. MANUFACTURE OF FILMS FOR PHOTOGRAPHIC PURPOSES. J. H. Smith, Zürich, Switzerland.

The process consists in coating upon an appropriate smooth support a gelatin solution and, after drying, coating upon this again a solution of nitro-cellulose. A sensitive photographic emulsion is coated upon the dried nitro-cellulose surface, and, after the emulsion is dried, the triple film is stripped from its support. A second film is prepared in the same manner, omitting, however, the coating of the sensitive emulsion, and this is also stripped from its support. The plain gelatin surfaces of the two component films are then brought into contact and squeegeed together in a moist condition, yielding a film composed of a top layer of sensitive photographic emulsion, then a layer of gelatin, next two layers of nitro-cellulose and finally a bottom layer of gelatin. Other modified methods of manufacture are indicated, but the results are the same.

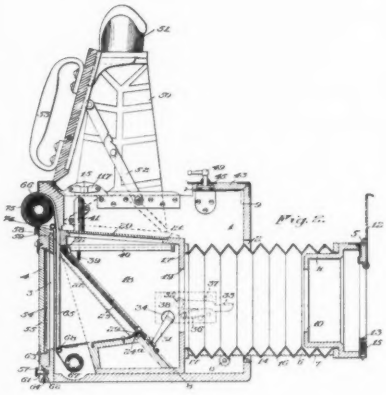
923,669. DEVELOPING-TANK. John Goldston Lavender, New York City. Assignor to George Murphy, Inc., New York City.

The tank is much like the ordinary type, except that the rack for plates is made in two extensible halves, so that plates of any size may be accommodated, up to the capacity of the tank. Another feature is that the funnel, through which the developer is poured, is trapped at the bottom to prevent admission of light, thus making it possible to develop in daylight after the plates have been transferred to the tank in a dark-room or changing-bag.

June 8, 1909

923,827. CAMERA. Wm. F. Folmer, Assignor to Eastman Kodak Co., Rochester, N. Y.

A focal plane camera of the reflecting-type much like those now in use, except for minor details of construction. It may be built for plates, or for films as shown in the diagram.



The locking-device 49 is located near to the handle 53 when the cover is closed, so that should the operator desire suddenly to make a snap-shot, his thumb can conveniently reach the release, whereupon the camera will drop from the cover and its own weight will operate the focusing-hood to its expanded position.

924,089. REFLECTOGRAPH. Marino Monaco, Stockton, Cal.

By means of a flexible ring of rope or rubber hose laid on the floor and a sheet of rubber cloth placed over this a pool is formed which may be filled with water and used in a studio in connection with suitable scenery to produce the effect of outdoor water-scenes, naturalness and the reflections of persons in the water being the chief advantages.

924,147. CAMERA. George W. Curtiss, Kansas City, Mo.

This is a camera for exposing kinematograph films, so constructed as to cause a continuous forward feed of the film-web from the upper reel to the tension-case in line with the exposure-opening, the parts being so positioned as to allow a space in which a portion of the web may rest before being drawn into the case. While the film is fed continuously, it is withdrawn intermittently in order that the film may remain stationary before the exposure-opening during the passing of the shutter-opening across it.

924,465. PHOTOGRAPHIC APPARATUS. Heinrich Hübscher, New York City.

A clock-work camera-attachment whereby the photographer may take either an instantaneous or time exposure of himself or other objects. From one to four minutes' time may be allowed, by the setting of a dial, for the photographer to pose in the view; an alarm gives a warning just before the shutter opens and continues during the exposure.

XUM

NOTES AND NEWS

Announcements and Reports of Club and Association Meetings, Exhibitions and Conventions are solicited for publication

The Dresden Exposition

On account of lack of space Mr. E. O. Hoppé, in his refreshingly independent and able review of the art-display at the Dresden Exposition, did not refer to the marvelously interesting exhibits in the various scientific departments; the extensive and brilliant displays in the Trades Building; the magnificent scale on which this great enterprise has been planned and carried out; the spacious and beautiful grounds, with ideal accommodations for refreshments, etc. An idea of the popularity of the Exposition may be gained from the fact that the attendance during the month of May was over 280,000! And four months more to be heard from! The cost of the fitting up of this vast show is over one million marks; but judging from the rate of attendance — admission one mark; during the evening fifty pfennige — the guarantors will get back their investment and a handsome dividend besides. If visitors to Europe see nothing outside of the Exposition and the beautiful city of Dresden, they will be fully repaid for the journey. Lucky, indeed, are those who are able to visit this really wonderful display of photographic art and science.

Subjoined is a list of the independent American amateurs, whose work is seen here, together with the number of prints allotted to each. Those marked with an asterisk are members of the Photo-Pictorialists of Buffalo.

Amateur Photographers

Allen, C. S., Portland, Me. 1
*Anthony, Oscar C., Buffalo 1
Archer, Chas. K., Pittsburg 1
Axell, Chas. O., Winnetka, Ill. 1
Beach, Howard D., Buffalo 1
Berger, Henry, Jr., Portland, Ore. 1
Bertling, W. E., Buffalo 1
Bingham, Katherine, St. Johnsbury 1
*Booz, Chas., Buffalo 2
Brittingham, A. D., Mt. Vernon, N. Y. 1
Brodhun, W. D., Wilkes-Barre 1
Bronson, F. E., Hornell, N. Y. 1
Brookins, D. H., Chicago 2
Burnham, C., Cleveland 1
Carruth, Anna K., Cambridge 1
Carruth, Chas. T., Cambridge 1
Castle, Wm. H., Philadelphia 2
Chislett, John, Indianapolis 2
Clarke, C. F., Springfield, Mass. 2
Clime, W. S., Washington 1
Davis, Dwight A., Worcester 1
Davis, Eleanor W., Cambridge 1
Dooner, R. T., Philadelphia 1
Dresel, Louisa, Boston 1
Eisen, Gustav, San Francisco 1
Eitel, Theodore, Louisville 1
Ellis, Wm. Shewell, Philadelphia 1
Farquharson, P. G., Brooklyn 1
Field, J. H., Berlin, Wis. 2
Flint, Arthur H., Brooklyn 1
Fraprie, F. R., Boston 4
French, Wilfred A., Boston 1
Goldensky, Elias, Philadelphia 1
Grierson, J. W., New York 1
Griffin, Lillian B., New York 1
Holden, Samuel, Brooklyn 2
Howard, A. P., Portland, Me. 1
Howe, Lois L., Cambridge 1
Ivers, J. J., Denver 1
Jones, John F., Toledo 1
Kauffman, R. S., Wilkes-Barre 2
Keller, Lee H., New York 1
*Keller, G. Edwin, Buffalo 3
Knox, Wm. T., New York 3
Kraft, Adam, Wilkes-Barre 1
Kunz, Wm. H., Buffalo 2
Latimer, Horace A., Boston 2
Leach, George W., Wilkes-Barre 1
Leavitt, Margaret E., Cambridge 1
*Lidbury, F. Austin, Buffalo 2
Littleton, Wm. G., Philadelphia 1
Loud, Joseph Prince, Cambridge 1
Macnaughtan, W. E., Brooklyn 1
Man, Gertrude E., Minneapolis 1
Mason, George J., Buffalo 2
Maxdon, Charles F., Philadelphia 1
McGeorge, Robert R., Buffalo 1
Minns, Harvey W., Akron 2
Montgomery, Robert, Brooklyn 2
Newman, Samuel J., New York 1
Nicholson, J. W., Philadelphia 2
Palmer, J. Will, Nashua, N. H. 1
Parrish, W. and G., St. Louis 1
Peabody, Caroline E., Cambridge 1
Peabody, Charles, Cambridge 1
Peabody, Henry A., Portland, Me. 1
Peabody, Jeannette B., Cambridge 1
Pearce, Mrs. W. W., Waukegan, Ill. 1
Peterson, J. R., Portland, Me. 2
Phillips, Wm. H., East Liverpool, O. 1
Phipps, Charles R., Buffalo 2
Pitchford, Emily, Berkeley, Cal. 1
*Porterfield, W. H., Buffalo 4
Rau, Carl, La Crosse, Wis. 1
Rheinheimer, Wm. A., St. Louis 1
Roberts, H. A., Portland, Me. 1
Sanger, Chas. R., Cambridge 1
Saunderson, F. A., Boston 1
Scheer, George H., Sheboygan 1
*Schreck, John M., Buffalo 1
Scott, Walter A., San Francisco 1
*Sides, Edward B., Buffalo 3
Skolfield, S. S., Portland, Me. 3
Sleeth, R. L., Jr., Wilkinsburg 2
Smith, Harry G., Portland, Ore. 1
Strayer, W. E., Pittsburg 2
Taylor, C. C., Toledo 1
*Thibaudeau, Augustus, Buffalo 4
Thompson, F. H., Portland, Me. 1
Thorne, H. J., Portland, Ore. 1
Thorp, Joseph G., Cambridge 1
Thurston, C. O., Wilkes-Barre 1
Underhill, James E., Brooklyn 2
Weiss, Charles J., Philadelphia 1
White, W. McG., Pittsburg 1
Winchester, W. H., Sheboygan 1
Wish, O. P. T., Portland, Me. 1
Witt, Max Richard, Philadelphia 2
Yont, C. A., Denver 1
Zerbe, Wm. H., Richmond Hill, L. I. 2
Zimmerman, Walter, Philadelphia 1

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Professional Photographers

Alman & Co., New York 9
Baker Art Co., Columbus 5
Barrows, Frank R., Boston 2
Bateham, C. S., Norwalk, Ohio 3
Bowersox, A. L., Dayton, Ohio 3
Bell, Curtis, New York 6
Bradley, A. F., New York 10

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AT THE DRESDEN PHOTOGRAPHIC EXPOSITION

ONE OF THE ROOMS IN THE GERMAN PICTORIAL SECTION
THE TRADES BUILDING
A PORTION OF THE FIVE GERMAN ONE-MAN SHOWS

Byron, Joseph, New York	4
Clark, Frank Scott, Detroit	8
Core, E. B., New York	10
Dooner, R. T., Philadelphia	3
Doty, E. E., Belding, Mich.	3
Edmondson, George M., Cleveland	5
Elliot, J. Mitchell, Germantown, Penn.	5
Ellis, Wm. Shewell, Philadelphia	5
Falk, B. J., New York	9
Field, J. H., Berlin, Wis.	3
Garo, J. H., Boston	10
Genthe, Dr. Arnold, San Francisco	5
Goldensky, Elias, Philadelphia	10
Hoyt, Dudley, New York	10
Hutchinson, Eugene R., Chicago	12
Janvier, Meredith, Baltimore	5
Käsebier, Gertrude, New York	5
Koehne, Wm., Chicago	3
Koshiba, Henry T., New York	5
Lifshey, S. H., Brooklyn	5
MacDonald, Pirie, New York	29
Marceau, T. C., New York	15
Mock, J. E., Rochester, N. Y.	5
Phillips, Ryland W., Philadelphia	5
Pierce, H. H., Boston	19
Proctor, A. T., Huntington, W. Va.	3
Rinehart, F. A., Omaha, Neb.	3
Schervee, Herman, Worcester, Mass.	3
Stein, S. L., Milwaukee	6
Strauss, J. C., St. Louis	15
Tingley, George E., Mystic, Conn.	3
Tyler, F. W., New York	3
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First To Be Photographed in England

To Lord Avebury, who recently celebrated his seventy-fifth birthday, belongs the honor of being the first person in England to be photographed. *Tid-Bits* states that M. Daguerre described his famous discovery to Lord Avebury's father, in London; and to prove its value the inventor made a portrait of the present peer, who was then a mere child.

Los Angeles Camera Club

On the evening of June 2 the following officers were elected for the coming year: president, T. M. Jenkins, reëlected; vice-president, R. S. Crandall, formerly trustee; secretary, T. K. Adlard, formerly vice-president; treasurer, Louis Fleckenstein, reëlected. A vote of thanks was extended to the retiring officers for their faithful and efficient work during the first year of the club's existence, and also to President Jenkins for the harmonizing influence he had brought to bear on the members during his term of office. The club has grown during its first year from thirteen to nearly fifty members, and bids fair to increase to proportions that will necessitate procuring larger and better equipped quarters than it now occupies.

Who Rode the Donkey?

Percy (exhibiting a bromide enlargement of kodak snap-shot of himself riding a donkey): See, Dick, I had this taken when I was South during the holidays. Do you think it does me justice?

Dick: Why, yes, rather; but who's the awkward rider on your back?

O wad some power the giftie gie us to see our pictures as ithers see them.

Copyrighting Photographs

The item on the new copyright act, together with directions for copyrighting photographic prints so that they may be absolutely protected against picture-pirates, which was intended to be printed in this issue, but was omitted for lack of space, will appear as a special article in the October number.

An Autochrome Rainbow

We had the privilege to examine an autochrome made by Charles T. Jeffery, Kenosha, Wis. It represented a view of a lake dominated by a mass of clouds and a well-defined rainbow in all its natural beauty. The picture was taken from the shore of Lake Michigan overlooking the lake, about 5 P.M., June 13, 1909.

A Prosperous Photographer

William H. Partridge, the widely-known successful Boston photographer, who has branch studios at Brookline, Newtonville, Roxbury and Boston, Mass., has lately purchased the magnificent residence of Charles J. Page, Esq., 90 Westland Avenue, in the most fashionable business and residential section of the Hub. This is in a location well adapted to successfully carrying on a high-class photographic business of the sort with which Mr. Partridge has been identified for a great many years. This last move of one of Boston's most prosperous photographers speaks well for photography as a vocation, although the average practitioner is lacking in those sterling business-qualities, aside from artistic ability, which are the foundation of Mr. Partridge's success. We congratulate Mr. Partridge on establishing his residence and Boston studio in so beautiful an edifice, of which he is now the owner. This does away with the Wellesley branch, which has also been his home for several years.

Willing to Oblige

Lady (sitting for portrait): "Please make my mouth small. I know it is large, but I wish it to appear quite tiny."

Artist (politely): "Certainly, madam. If you prefer, I will leave it out altogether."

Chicago Camera Club

The annual election of the Chicago Camera Club was held June 3, 1909. The following officers were elected for the following year: president, Dr. F. B. Noyes; vice-president, Geo. C. McKee; secretary and treasurer, H. A. Langston; directors, Clarence B. Hale, Geo. W. Alexander, C. M. Hibbeler, Chas. E. Selleck.

Meetings are held every Thursday evening, at the club-rooms, Northwestern University Building, 87 Lake St. Visitors will be cordially welcomed. During the past season several prominent Chicago artists and photographers have given informal talks, and the meetings have been well attended.

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The American Federation of Photographic Societies

An organization for the advancement of pictorial photography, encouragement of pictorial workers, and the development of new talent.

OFFICIAL ORGAN: PHOTO-ERA

President: GEORGE W. STEVENS, Toledo Museum of Art, Toledo, O.
Vice-President: JOHN F. JONES, 934 Ash St., Toledo, O.
Secretary: C. C. TAYLOR, 3236 Cambridge Ave., Toledo, O.
Treasurer: GEORGE W. BEATTY, 1629 Nicholas Bldg., Toledo, O.
Historian: WM. A. RHEINHEIMER, 1222 Clara Ave., St. Louis, Mo.

JUDGING from the correspondence received by the officers of the Federation, the Sixth Salon is going to be an artistic triumph. Many of the foremost American workers have signified a desire to submit their best prints, and inquiries are received almost daily to the extent that it smacks much of patriotism. And well it might, for the foreign workers are very much alive to the benefits to be derived from the American Salon, and they will send their favorite examples of pictorial genius. The Italians have hit on a plan that must, of its very nature, prove successful. They have issued a general appeal to all workers to send their best prints to Genoa, where they will be assembled as a Salon, and an opportunity given to the public to view and pass judgment on their artistic value. The prints will be judged by a competent jury, and prizes awarded, and at the proper time the entire collection will be forwarded to the Federation at Toledo. The other Foreign Commissioners have the promise of the very best work of their respective countries, so that it will be up to our own camerists to look to their laurels so that our own artistic temperament may be shown to the best advantage.

The itinerary of the Sixth Salon will be a very attractive one, embracing, as it does, all of our greatest art-centers. It will be hung in many of our principal museums of art, such as the Carnegie Institute of Pittsburg, The Allbright Art Gallery of Buffalo, The Art Institute of Chicago, The John Herrin Art Institute of Indianapolis, The Detroit Museum of Art, The Toledo Museum of Art, as well as in New York, St. Louis, St. Paul, Milwaukee, Grand Rapids and other cities.

The prospectus and entry-blanks are out and have been mailed to all club secretaries, as well as individual workers, and if you did not receive one it will be sent you on request.

Particular attention is called to Article 6 of the conditions. Under the proposed plan, entrants may, if they so desire, submit prints ready for framing and they will go before the judges without prejudice, and accepted prints will be framed by the Salon Committee, at the expense of the entrant, at prices from fifty cents to $1.00. This will reduce expenses to the entrant very materially and should prove very popular. The frames will be of material suitable for rough handling, as that is needed when frames are hung as often as in a traveling Salon. Yet you may, if you desire, submit your work framed, as of old.

A Photographers' Outing

THE Sixth Annual Field-day of the Professional Photographers' Club of Boston was held June 27. The party left the North Station, June 26, at 5 P.M., and went by train to Gloucester, thence by trolley to the famous Coggeshall Camp, delightfully situated on the northeastern shore of the island of Gloucester, between Lanesville and Annisquam. The scenery in this locality is of peculiar charm and appeals most eloquently to the artist's brush. Back of the camp rise thickly wooded hills alive with song-birds. The weather was very comfortable in comparison to the unprecedented and oppressive heat in Boston. The scenery tempted the artistic and interpretative skill of the artists, who were equally at home with the palette as with the camera. In the evening an attractive musical program was furnished by Mr. Parkinson, whose musical prowess as pianist and organist, in addition to his photographic ability, is widely known. The homeward journey was made Monday morning, June 28, every one regretting to be obliged to leave so entrancing a place. The party included several well-known Boston photographers and their wives: Mr. and Mrs. J. H. Garo, Mr. and Mrs. W. H. Partridge, Mr. and Mrs. Morris Burke Parkinson, Miss Nellie F. Hall, Miss E. Marion Parker, Mr. A. T. Barraud, Mr. W. A. Clark and Mr. Wilfred A. French.

Indiana Association of Photographers

THE Fifth Annual Convention of the Indiana Association of Photographers, at the Daguerre Memorial Institute, Winona Lake, July 5 to 9, was a very interesting affair and drew a large attendance. Much of its success was due to the "Association Year-Book" of this body, which is a very creditable performance. In size, workmanship and tasteful appearance it is a close second to the "Association Review" of the National Association. The credit for this excellent piece of work is due to the enterprise and energy of Mr. E. K. Shalley, the secretary of the Association, and to the printers, Berne Witness Company — both of Berne, Ind.

"Photographic Progress"

THIS is the name of a new and attractive little magazine published by the Rittenhouse Press, of Philadelphia, which will be devoted to the art, technique and business-end of professional photography. The field should prove a good one if the magazine is properly conducted, as we have reason to think it will be, and we wish our new cotemporary success and prosperity. On the staff are A. K. Boursault, Managing Editor; Thomas Bedding, F. R. P. S., Technical Editor, and J. Nilsen Laurvik, Editor.

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BOOK-REVIEWS

Books reviewed in this magazine, or any others our readers may desire, will be furnished by us at the lowest market-prices.

DIE PHOTOGRAPHISCHE KUNST IM JAHRE 1908, illustrated in photogravure, half-tone and color. Edited by F. Matthies-Masuren. Size of volume, 9 x 11½ inches. Price, $2.00; stiff covers, $2.25. Wilhelm Knapp, Halle, Germany.

This annual pictorial survey, in a limited sense, of the photographic art is as sumptuous as ever, although in comprehensiveness it leaves much to be desired. The editor continues to rely on one narrow, prejudiced source of information regarding pictorial photography in America, hence no workers this side of the ocean are recognized except members of the Photo-Secession; the Photo-Pictorialists of Buffalo and other important groups of workers in the United States are not even mentioned. In spite of this serious omission, the volume is interesting, although the half-tone reproductions do not adequately represent the original prints. Evidently the half-tone plates were made without considering the character of the paper used in the body of the book, and which, in itself, is of superior quality. The review of pictorial activity is confined, with very few exceptions, to the Linked Ring as represented by workers in Great Britain, Germany, Austria, France, Belgium and the United States, who, however, do not appear to as good advantage as in previous years. Landscapes by Robert Reininger and Otto Scharf, a marine by Friedrich Spitzer and facsimile reproductions of autochromes by Heinrich Kühn and Hugo Erfurth are the principal art-features of the book.

ENCYCLOPAEDIA OF PHOTOGRAPHY. Brochures. Wilhelm Knapp, Halle, Germany.

Among the recent issues of this admirable series of monographs which interest, particularly, those workers who can read German, are the following:

No. 60. Die Theorie und Praxis der Farbenphotographie mit Autochrom-Platten, by Arthur Freiherrn von Hübl. Price, 50 cents. This is the second, improved edition of the work reviewed in PHOTO-ERA for May, 1909.

No. 63. Moderne Photographische Kopierverfahren, by Dr. Erich Stenger. Price, 50 cents.

The author aims to acquaint the professional, in particular, with up-to-date photographic printing-processes, calculated to produce from intelligently-executed originals artistically excellent prints. After paying a high tribute to the amateur for having not only originated and introduced the various modern printing-methods, but taken over their technical development, Dr. Stengel proceeds to explain Ozobrome, Brom-Silver Pigment, Oil, Bromoil, Katatype and, the latest achievement in the realm of modern printing-methods, Pigment-Gravure. The manner in which this important subject has been treated by Dr. Stenger is sure to create a general demand for this admirable brochure.

No. 64. Die Panoramenapparate in ihren Vorzügen und Mängeln sowie ihre Verwendung in der Praxis, by Dr. F. Stolze. Copiously illustrated. Price, 75 cents.

The energy of this resourceful and indefatigable investigator is shown in his latest published work — devoted to Panoramic Cameras, their merits and deficiencies, as well as their uses. He has handled this interesting subject with characteristic perspicuity, thoroughness and accuracy, considering it from every possible technical view-point and revealing a complete mastery of the intricacies of this form of photographic practice. Every style of camera and apparatus used for panoramic photography has been carefully analyzed, and the most successful methods are fully described. The concluding chapter is devoted to aërial photography, with special reference to panoramic views.

No. 65. Allgemeine Aesthetik der photographischen Kunst auf psychologischer Grundlage. Für Künstler und Freunde photographischer Kunst, by Herrn Willi Warstat, Phil. Dr. Price, 75 cents.

This is a serious consideration of the æsthetic aspect of the higher forms of artistic expression by means of the camera. The writer is profoundly impressed by the noble, dignified achievements of the masters of photography, including, particularly, the portrayal of character and individuality. Men of the mental caliber of Dührkoop, Perscheid, Hollyer, Crookes, Lewis, MacDonald, Strauss, Garo and others, raised far above the ordinary craftsmen, bring to their tasks not merely a complete technical equipment, but a genuine, serious artistic temperament and rare intellectual power. They are thorough students of human character and, consequently, qualified to interpret through the means at their disposal the personality of their sitters as it reveals itself to them. The psychological character of interpretations of sea and landscape is due to genius as exemplified by such pictorialists as Job, Whitehead, Blake, Kühn, Misonne and, of our own, Porterfield, Vandervelde and others. Dr. Warstat explains the technical means which facilitate such æsthetic performances, and his work is extremely interesting from that viewpoint alone.

No. 66. Die Photographie als Lehr-und Forschungsgegenstand, by Dr. R. Luther. Price, 25 cents.

This is a lecture delivered by the author, May 1, 1908, at the Technical High School, Dresden, in which he treats photography as a subject for instruction and research. Being professor of photographic science at the above-named institution, Dr. Luther advocates the application of photography to all manner of scientific demonstrations, and it is really astonishing to what variety of uses the camera is adapted. Workers desirous to seek new, unexplored fields will do well to peruse Dr. Luther's little work.

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WITH THE TRADE

Visiting the Exposition

MANY of those who have returned from a visit to the wonderful International Photographic Exposition, at Dresden, have gone and come by the Holland-America Line, and speak in terms of the highest praise of the service, cuisine and comfort of this superb line, which is growing daily in popularity. The price is extremely low for such fine accommodations, which are reported to be equal to those of any other ships crossing the ocean. We earnestly recommend that this line be considered by those who contemplate a journey across the ocean.

Printing with Kruxo

ONE of the most attractive booklets that have come to our desk in some time is that just published by the Kilborn Photo-Paper Co., Cedar Rapids, Io., and entitled "Kruxo, and How To Use It." This is not merely an advertisement of Kruxo papers, but a text-book on printing, as it contains much general information that makes it worth having.

Costly Advertisements

The Ladies' Home Journal charges $4,000 for a single page of advertising. Here are a few other high-priced publications: *Youth's Companion*, $2,400 per page; *Saturday Evening Post*, $1,900; *Woman's Home Companion*, $1,800; *Delineator*, $1,800; *Collier's Weekly*, $1,600; *Chicago Daily News*, $1,141; *New York Herald*, $998; *New York American*, $980; *New York World*, $896; PHOTO-ERA, $50, which price ensures a larger number of photographic readers than any of the above-named mediums.

Mr. Ward's New Lectures

MR. H. SNOWDEN WARD, photographer, editor, critic, lecturer, who, though late in making arrangements for his lecturing-tour last season, attained an unexpected measure of success, will visit us again next season. He will be prepared to give a popular science entertainment, "The Marvels of Photography," which will contain several attractive features interesting alike to photographers, laymen, scientists and highly cultured people. Besides this, Mr. Ward's satchel will contain other and equally attractive lectures, all sure to appeal to American audiences. The lecture-season in the United States will begin January, 1910; and it will be well for clubs and societies to bear this in mind in preparing their lists of entertainments for the coming season.

Actresses will happen in the best regulated studios.

Color-Photography

THOSE pictorialists who like best to see nature in her own true colors will welcome the reduction of twenty per cent in the prices of Autochrome plates. This, with the new simplified method of development and the improvement in the plates themselves, should make the Lumière process of color-photography much more popular than hitherto.

Steinheil Lenses

EVERY camerist who contemplates the purchase of a high-grade anastigmat should procure a catalog of Steinheil lenses, supplied by Herbert and Huesgen, 311 Madison Ave., New York. Of particular interest to hand-camera workers is the new Series B Orthostigmat f/6.8. Although possessing great speed, it is not too large for Kodaks, and can be fitted to Compound or Koilos shutters. It is a universal lens, and, therefore, adapted to instantaneous work, portraits, groups, landscapes, interiors and copying.

Herbert and Huesgen will also place on the American market in the near future an instantaneous ray-filter of Steinheil manufacture. This is known as the Plano-Parallel Yellow Screen. The glasses of which they are made are colored in the mass, so that the reduction in actinic action of blue rays is very great. Only double exposure is required for the lighter filters and four times exposure for the darker ones, so that orthochromatic photography is possible without a tripod. The glasses are absolutely plane and parallel, permitting of very exact work.

Chemicals of Purity

THE time has passed long since when photographers would accept without question any chemicals sold by local dealers. The importance of standard purity and quality was never so fully appreciated as it is today. Thus the successful camerist insists that his chemicals be made in laboratories of high reputation, among which that of Powers-Weightman-Rosengarten Company, of Philadelphia, stands in the foremost rank. Readers of PHOTO-ERA who require their dealers to supply P-W-R brand chemicals are assured of the best that can be manufactured. A handy list of chemicals may be had on application to this firm.

"Portrait"

THIS little journal makes its third appearance, interesting as ever, with a portrait of Dudley Hoyt, "Photographer of Women," on its cover. Many are the valuable suggestions to be found within, and professional photographers should ask to be put on the list.